



## US Energy Tax: How Level Is the Playing Field?

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A new study has been issued by the Manhattan Institute, called [TAXING ENERGY IN THE UNITED STATES: Which Fuels Does the Tax Code Favor?](#) The study was written by Gilbert Metcalf of Tufts University. I also participated in a conference call with Metcalf regarding the report. A couple of Metcalf's findings:

- The tax code is not at all generous with respect to investments in the electric grid. The effective tax rate on these investments is very close to the unadjusted statutory tax rate of about 39%. If investment is to be encouraged in the electric grid, Dr. Metcalf believes that this tax rate must be lowered.
- The current tax code, especially since enactment of the Energy Policy Act of 2005, strongly encourages investment in nuclear, wind, and solar power, which enjoy tax subsidies ranging from nearly 100 percent, for nuclear, to more than 200 percent, for solar. In other words, tax subsidies for these forms of energy generation are sufficiently generous that investors may use them to offset tax liabilities for capital gains and income derived from non-energy investments. The telephone discussion indicated that these provisions are not currently working as intended for wind and solar, because of lack of "tax appetite".

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In order to compare tax rates for different energy products, Metcalf calculates the [effective tax rate](#) for new energy investments, using provisions from the tax code as he interprets them. This effective tax rate is a combination of the federal tax rate and an average state tax rate. With no favorable offsets, Metcalf estimates the combined rate to amount to 39.3%. The primary table Metcalf shows in his report with respect to effective tax rates is this one:

	Current Law (1)	No Tax Credits (2)	Economic Depreciation (3)
<b>1. Electric Utilities</b>			
Generation			
Nuclear	-99.5%	32.4%	-49.4%
Coal (PC)	38.9%	38.9%	39.3%
Coal (IGCC)	-11.6%	38.9%	-10.3%
Gas	34.4%	34.4%	39.3%
Wind	-163.8%	12.8%	-13.7%
Solar Thermal	-244.7%	12.8%	-26.5%
Transmission and Distribution			
Transmission Lines	34.0%	34.0%	39.3%
Distribution Lines	38.5%	38.5%	39.3%
<b>2. Petroleum</b>			
Oil Drilling (nonintegrated firms)	-13.5%	-13.5%	39.3%
Oil Drilling (integrated firms)	15.2%	15.2%	39.3%
Refining	19.1%	19.1%	39.3%
<b>3. Natural Gas</b>			
Gathering Pipelines	15.4%	15.4%	39.3%
Other Pipelines	27.0%	27.0%	39.3%
Source: Author's calculations			

The first column shows the amounts as Metcalf calculates them under the current law. A rate of 39.3% would indicate that there are no provisions giving any sort of tax benefit. Rates lower than 39.3% would indicate some type of tax benefit. To illustrate whether the benefit results from a favorable depreciation schedule or a tax credit, he shows two additional columns, the first showing the effective tax rate excluding any tax credit, and the other showing the effective tax rate using economic depreciation, instead of the accelerated depreciation, if accelerated depreciation is permitted under the tax code.

It is clear from this table that nuclear, wind, and solar thermal are all taxed very favorably. (A negative tax rate is a very favorable tax treatment.) There are different tax treatments for pulverized coal (PC) electric power plants and integrated gasification combined cycle (IGCC) power plants. IGCC power plants are theoretically more adaptable to CO<sub>2</sub> sequestration than PC power plants, so are taxed more favorably.

Electrical transmission and distribution lines receive practically no tax benefit. Metcalf believes this needs to be changed, if utilities are to be encouraged to upgrade their infrastructure both to handle congestion and to handle new production from wind and solar.

Tax rates are different for integrated companies and non-integrated (independent) oil and gas companies, with the non-integrated taxed more favorably. As an alternative to cost depletion, independent oil and gas companies are allowed to take percentage depletion, which is more favorable, up to 1,000 barrels a day.

In the telephone call discussing the paper, Metcalf mentioned several things not discussed in the paper.

In any investment decision, profitability is an issue as well as effective tax rates. IGCC power plants are expensive, even with the lower tax rates. With the current lower energy prices, many

investments many not be profitable, regardless of tax rates. This is likely part of the problem for wind and solar.

Another issue is "tax appetite" for tax credits. Wind and solar have big tax credits, and in the past, this has helped encourage investment. The wind and solar companies have not been able to use the tax credits directly themselves, but instead have partnered with banks, who could use the credits. The problem now is that banks doing the financing have little appetite for these tax credits, either because they themselves are not profitable and have no use for the tax credit, or because tax laws have changed, and they can now buy another bank, and offset their taxes through this approach instead.

One question raised was what changes stimulus legislation could make, if there is little tax appetite for refunds. Metcalf said he thought that "refund ability is off the table" with the Obama administration, where refund ability is defined as allowing full benefit, whether or not any profit is actually earned (and taxes paid). In the absence of refund ability, the possible stimulus approaches Metcalf suggested for upgrading the electric grid were

1. US direct investment - Metcalf thought this was unlikely for the grid.
2. Remove obstacles to grid investment - Many types, including siting new lines.
3. Carbon price - Back door approach - If price for coal-fired generation is higher, this will make investment to benefit wind more attractive.
4. Accelerated depreciation - Perhaps write off smart meters over 10 years instead of 20 (but still needs taxable income to work)

In the final section of his paper on Implications for investment, Metcalf makes the following remarks:

The effective rate measures help explain several facts about recent trends in energy capital investment. First, the recent boom in wind and solar renewable investment, especially in wind, is consistent with the large negative rates for wind and solar. . .

Second, the production tax credit for new nuclear-power plants is driving the large negative effective tax rate on new nuclear-power construction and is likely contributing to the resurgent interest in nuclear construction. . .

Third, domestic oil and gas drilling increased markedly with the run-up in oil prices. . . The effective-tax-rate estimates in Table 2 suggest that a strong incentive exists for capital to flow to independent firms that can take advantage of the benefits of percentage depletion and the expensing of intangible drilling costs. . .

Finally, despite the urgent need to upgrade and expand the electricity transmission network, there is a lack of investment incentives that would encourage the flow of financial capital to this asset. This is particularly worrisome given the need to move electricity from remote sites that are well suited to renewable electricity generation to high-demand areas. Generous production and investment tax incentives for renewable energy are undermined to the extent that the domestic electricity transmission network cannot move this new power over the grid.



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