HOUSE COMMITTEE ON APPROPRIATIONS

2009-10 Legislative Session

FISCAL NOTE

HOUSE BILL: 80 **PRINTER'S NO: 2177 As Amended by A02274** **PRIME SPONSOR: Vitali**

FISCAL IMPACT SUMMARY	**FY 2008/09**	**FY 2009/10**
Estimated Expenditure Increase/(Decrease):		
Commonwealth funds	$0	$0[a]
Political Subdivision funds	$0	$0[a]
Public utilities restricted revenue account in the General Fund (from utility company assessments)	$0	$265,000
Estimated Revenue Increase/(Decrease):		
Carbon Dioxide Indemnification Fund (new)	$0	See Analysis
Environmental Stewardship Fund	$0	See Analysis

[a]See analysis for long-term impact.

OVERVIEW:

House Bill 80, as amended by Amendment A02274, amends the Alternative Energy Portfolio Standards (AEPS) Act of 2004 (No. 213) to do the following: (1) it increases the amount of alternative energy resources required to be sold to retail electric customers and creates a new Tier III category of energy sources, which includes "incremental nuclear;" (2) it requires an additional report from the Public Utility Commission (PUC); (3) it expands solar-generated power to include solar thermal and requires solar powered electricity sold to retail customers to be generated within the Commonwealth; (4) it gives the PUC discretion to increase alternative compliance payments; (5) it allows electric companies to bank energy credits for longer periods, and (6) it further defines advanced coal combustion with limited carbon emissions as an alternative energy source and provides for carbon dioxide sequestration facilities and carbon dioxide transportation pipelines on Commonwealth State Forest lands and related conditions

<u>Increased Alternative Energy Requirements</u>

This bill increases required alternative energy consumption by adding graduated scales of minimum percentage electric energy sales for each Tier I alternative energy source, Tier II source, and solar photovoltaic technology, and it creates a new Tier III alternative energy category.

The bill changes minimum percentages of electricity sold to retail customers from Tier I alternative sources, which is detailed in the following table. In addition, the Commission is directed to increase Tier I percentages based on each additional alternative energy source provided for by §2814 of Title 66 (Public utilities), Pa.C.S., which are new biomass energy or low-impact hydropower resources.

Reporting Year	Time Period	Current Law: Tier I & Photovoltaic	H.B.80:Tier I, Photovoltaic, & Solar Thermal	Increase due to H.B.80
1	June 1, 2006 to May 31, 2007	1.5%	1.5013%	0.0013%
2	June 1, 2007 to May 30, 2008	1.5%	1.5030%	0.0030%
3	June 1, 2008 to May 31, 2009	2.0%	2.0063%	0.0063%
4	June 1, 2009 to May 31, 2010	2.5%	2.5120%	0.0120%
5	June 1, 2010 to May 31, 2011	3.0%	3.0203%	0.0203%
6	June 1, 2011 to May 30, 2012	3.5%	3.5504%	0.0504%
7	June 1, 2012 to May 31, 2013	4.0%	4.0752%	0.0752%
8	June 1, 2013 to May 31, 2014	4.5%	4.6218%	0.1218%
9	June 1, 2014 to May 31, 2015	5.0%	5.7016%	0.7016%
10	June 1, 2015 to May 30, 2016	5.5%	6.8000%	1.3000%
11	June 1, 2016 to May 31, 2017	6.0%	7.9100%	1.9100%
12	June 1, 2017 to May 31, 2018	6.5%	9.0000%	2.5000%
13	June 1, 2018 to May 31, 2019	7.0%	10.1200%	3.1200%
14	June 1, 2019 to May 30, 2020	7.5%	11.2500%	3.7500%
15	June 1, 2020 to May 31, 2021	8.0%	12.4700%	4.4700%
16	June 1, 2021 to May 31, 2022	8.0%	13.8500%	5.8500%
17	June 1, 2022 to May 31, 2023	8.0%	15.4000%	7.4000%
18	June 1, 2023 to May 30, 2024	8.0%	16.9500%	8.9500%
19	June 1, 2024 & thereafter	8.0%	18.0000%	10.0000%

The bill expands the category of solar photovoltaic technology to include solar thermal energy technologies and changes minimum percentages of electricity sold to retail customers follows:

Reporting Year	Time Period	Current Law: Photovoltaic only	H.B.80: Photovoltaic, & Solar Thermal	Increase due to H.B.80
1	June 1, 2006 to May 31, 2007	0.0013%	0.0013%	0.0000%
2	June 1, 2007 to May 30, 2008	0.0030%	0.0030%	0.0000%
3	June 1, 2008 to May 31, 2009	0.0063%	0.0063%	0.0000%
4	June 1, 2009 to May 31, 2010	0.0120%	0.0120%	0.0000%
5	June 1, 2010 to May 31, 2011	0.0203%	0.0203%	0.0000%
6	June 1, 2011 to May 30, 2012	0.0325%	0.0504%	0.0179%
7	June 1, 2012 to May 31, 2013	0.0510%	0.0752%	0.0242%
8	June 1, 2013 to May 31, 2014	0.0840%	0.1218%	0.0378%
9	June 1, 2014 to May 31, 2015	0.1440%	0.2016%	0.0576%
10	June 1, 2015 to May 30, 2016	0.2500%	0.3000%	0.0500%
11	June 1, 2016 to May 31, 2017	0.2933%	0.4100%	0.1167%
12	June 1, 2017 to May 31, 2018	0.3400%	0.5000%	0.1600%
13	June 1, 2018 to May 31, 2019	0.3900%	0.6200%	0.2300%
14	June 1, 2019 to May 30, 2020	0.4433%	0.7500%	0.3067%
15	June 1, 2020 to May 31, 2021	0.5000%	0.9700%	0.4700%
16	June 1, 2021 to May 31, 2022	0.5000%	1.3500%	0.8500%
17	June 1, 2022 to May 31, 2023	0.5000%	1.9000%	1.4000%
18	June 1, 2023 to May 30, 2024	0.5000%	2.4500%	1.9500%
19	June 1, 2024 & thereafter	0.5000%	3.0000%	2.5000%

The bill changes minimum percentages of electricity sold to retail customers from Tier II alternative sources as follows:

Reporting Years	Time Period	Current Law: Tier II	H.B.80: Tier II	Increase due to H.B.80
1 to 4	June 1, 2006 to May 31, 2010	4.2%	4.2%	0.0%
5 to 9	June 1, 2010 to May 31, 2015	6.2%	6.2%	0.0%
10 to 14	June 1, 2015 to May 30, 2020	8.2%	11.2%	3.0%
15 & after	June 1, 2020 & thereafter	10.0%	13.0%	3.0%

The bill creates a new Tier III alternative minimum energy requirement that is above and beyond the other minimum alternative energy requirements in AEPS as follows:

Reporting Year	Time Period	H.B. 80: New Tier III
10	June 1, 2015 to May 30, 2016	3.0000%
11	June 1, 2016 to May 31, 2017	3.5000%
12	June 1, 2017 to May 31, 2018	4.0000%
13	June 1, 2018 to May 31, 2019	4.5000%
14	June 1, 2019 to May 30, 2020	5.0000%
15	June 1, 2020 to May 31, 2021	5.5000%
16	June 1, 2021 to May 31, 2022	6.0000%
17	June 1, 2022 to May 31, 2023	6.5000%
18	June 1, 2023 & thereafter	7.0000%

Tier III sources are defined as the following:

(1) solar photovoltaic and solar thermal energy,
(2) wind power,
(3) low-impact hydropower,
(4) geothermal energy,
(5) biologically derived methane gas,
(6) fuel cells,
(7) biomass energy,
(8) coal mine methane.
(9) advanced coal combustion with limited carbon emissions
(10) incremental nuclear, except incremental nuclear may not exceed 50% of the total Tier III requirement

The minimum alternative energy requirements in AEPS do not become effective until electric rate caps expire. For the five largest electric distribution service areas, accounting for 83% of the electricity market, AEPS is not yet effective. Rate caps have already expired for the following electric distribution companies: GI Utilities Inc. - Electric Division, Pike County Light & Power Company, Citizens Electric of Lewisburg, Wellsboro Electric Company, Duquesne Light Company, and Pennsylvania Power Company. The rate caps for PPL Electric Utilities Inc., expire December 31, 2009.

The rate caps for the following companies expire December 31, 2010: West Penn Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, and PECO Energy Company.

Solar Power To Be Generated in Pennsylvania

For purposes of fulfilling required minimum generation of solar photovoltaic electric energy, this bill expands the definition to include solar thermal technology but then limits such generation to that generated within the borders of the Commonwealth as of the effective date of the bill.

PUC Report

The bill requires the Public Utility Commission (PUC) every five years after the sixth reporting year, which is June 1, 2011 through May 31, 2012, to undertake a review of the compliance by electric distribution companies and electric generation suppliers with the provisions of the Alternative Energy Portfolio Standards Act.

Alternative Compliance Payments

AEPS allows the PUC to impose penalties known as "alternative compliance payments" on electric generation suppliers or electric distribution companies equal to 200% of the average market value of solar renewable energy credits if the PUC determines, after notice and hearing, the company did not meet its alternative energy goals set by AEPS. The bill gives the PUC discretion to increase the penalty amount above 200% in order to promote the development of the market, which will require the Commission to make a determination of what payment amount would increase development.

Banking Alternative Energy Credits

This bill allows electric generation and distribution companies to bank energy credits for four years as opposed to two.

Advanced Coal Combustion and Carbon Dioxide Sequestration

The bill adds "advanced coal combustion with limited carbon emissions" as a Tier II (capped at 3%) or Tier III alternative energy source and provides for carbon dioxide sequestration facilities and carbon dioxide transportation pipelines on Commonwealth State Forest lands with the following provisions

- No person may operate a carbon dioxide sequestration facility without a permit from the Department of Conservation and Natural Resources (DCNR).
- The Environmental Quality Board shall establish regulations and conditions under which a carbon dioxide sequestration facility may be located, developed, and operated.
- DCNR shall have the powers, duties, and enforcement authority provided by the Act of July 7, 1980 (P.L. 380, No. 97), known as the Solid Waste Management Act. Carbon dioxide sequestration facility operators shall have the same rights and be subject to the same penalties as provided by the Solid Waste Management Act; however, no violation shall exceed $50,000 per day per violation.
- Criteria are provided in the bill related to the title to carbon dioxide, immunity, and transfer of liability.

- A non-lapsing fund, known as the Carbon Dioxide Indemnification Fund, shall be established and shall only be used by DCNR to monitor and maintain carbon dioxide sequestration facilities after final closure and to take remedial actions, if necessary, after final closure. Money collected from fees assessed for every ton of carbon dioxide accepted by a sequestration facility, as well as money collected via fines, civil penalties, and permit fees under Section 8.1 (Sequestration Facility Permitting) are appropriated to DCNR to carry out the purposes of Section 8.1. Operators of a carbon dioxide sequestration facility shall pay fees to DCNR on a quarterly basis.
- DCNR is authorized to lease state forest land owned by the Commonwealth to any person, on terms and conditions as DCNR may consider appropriate, for the development and operation of a carbon dioxide sequestration facility and carbon dioxide transportation pipeline necessary to deliver carbon dioxide to the facility. All rents and other payments from any lease of Commonwealth State Forest land for such purposes shall be deposited into the Environmental Stewardship Fund.
- The bill provides for long-term contracts for advanced coal combustion generation facilities.
- The bill provides for force majeure and other provisions for the advanced coal combustion generation facilities to receive alternative energy credits if the facility through no fault of the facility.
- The bill defines carbon dioxide pipelines as public utilities under Title 66, Pa.C.S. This gives the Public Utility Commission regulatory power over these pipelines and will require the Commission to inspect them.

Effective Date
This act shall take effect immediately.

ANALYSIS:

Increased Alternative Energy Requirements
This bill increases minimum percentage requirements as follows:

Reporting Year	Time Period	Tier I	Solar	Tier II	New Tier III
3	June 1, 2008 to May 31, 2009	0.0063%			
4	June 1, 2009 to May 31, 2010	0.0120%			
5	June 1, 2010 to May 31, 2011	0.0203%			
6	June 1, 2011 to May 30, 2012	0.0504%	0.0179%		
7	June 1, 2012 to May 31, 2013	0.0752%	0.0242%		
8	June 1, 2013 to May 31, 2014	0.1218%	0.0378%		
9	June 1, 2014 to May 31, 2015	0.7016%	0.0576%		
10	June 1, 2015 to May 30, 2016	1.3000%	0.0500%	3.0%	3.0%
11	June 1, 2016 to May 31, 2017	1.9100%	0.1167%	3.0%	3.5%
12	June 1, 2017 to May 31, 2018	2.5000%	0.1600%	3.0%	4.0%
13	June 1, 2018 to May 31, 2019	3.1200%	0.2300%	3.0%	4.5%
14	June 1, 2019 to May 30, 2020	3.7500%	0.3067%	3.0%	5.0%
15	June 1, 2020 to May 31, 2021	4.4700%	0.4700%	3.0%	5.5%
16	June 1, 2021 to May 31, 2022	5.8500%	0.8500%	3.0%	6.0%
17	June 1, 2022 to May 31, 2023	7.4000%	1.4000%	3.0%	6.5%
18	June 1, 2023 to May 30, 2024	8.9500%	1.9500%	3.0%	7.0%
19	June 1, 2024 & thereafter	10.0000%	2.5000%	3.0%	7.0%

The Tier I increased requirement will immediately impact customers of Electric Division, Pike County Light & Power Company, Citizens Electric of Lewisburg, Wellsboro Electric Company, Duquesne Light Company, and Pennsylvania Power Company. On January 1, 2010, customers of PPL Electric Utilities Inc., will be impacted. Customers of West Penn Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, and PECO Energy Company will be impacted on January 1, 2011.

According to the 2007 Annual Report of the AEPS, the most recent available, most Tier I sources, except for geothermal and biomass energy, are more expensive than traditional sources. Traditional sources are coal (44.9% of total electric generation), natural gas (22.2%), and nuclear power (20.3%). The increased requirements may cause electricity prices to increase. If prices of traditional sources rise and prices of alternative sources continue to come down, however, the additional Tier I provision may not impact prices, or possibly, allow prices to fall.

It is highly likely that the increased solar requirements will cause electricity prices to rise beginning in 2011 despite expanding solar generation to include solar thermal. According to energy experts in industry, government, and academia, solar power is still, by far, the most expensive alternative energy source, and forecasts by the U.S. Department of Energy do not predict that solar electricity prices will be competitive any time soon. The Commonwealth and political subdivisions purchase electricity; thus, they will be fiscally impacted in 2011. Given the lack of specific analysis and the multitude of variables, it is not possible to quantify a reasonable forecast of the fiscal impact. The force majeure provision in AEPS will not likely to mitigate cost increases for solar because force majeure is triggered by availability, not cost.

House Rule 19(a) requires Fiscal Notes to forecast fiscal impact for five succeeding fiscal years, and the provisions for Tier II and Tier III come into effect after 2015, which is beyond the scope of this note.

<u>PUC Report</u>
The PUC does not anticipate any significant cost due to the compliance report required for the sixth reporting year. The PUC already has staff monitoring and overseeing the electric industry, and it will be able to accomplish the additional report with current staffing levels.

<u>Solar Power To Be Generated in Pennsylvania</u>
The limitation that solar photovoltaic and solar thermal generation must be within the borders of the Commonwealth to count toward AEPS will likely increase the cost of electricity for the Commonwealth and its political subdivisions because it will limit competition when solar markets develop. This conclusion is based on basic microeconomics principles of supply and demand. When supply is limited, ceteris paribus, price increases.

According to data at PJM Interconnection, the regional transmission organization that coordinates the movement of wholesale electricity in the District of Columbia and all or parts of 13 states, including Pennsylvania (except for Pike County Electric and Penn Power, serving Butler County), there is only one solar facility actively selling electricity on the wholesale market. This facility is in Bucks County, Pennsylvania. It is owned by Morgan Stanley Capital, operated by Eupron, and the output is purchased by the Exelon Power Team for the PECO Energy Company.

There are thirteen other solar facilities being planned or coming on line within the PJM service area, four of which are in Pennsylvania. This bill removes nine of the planned or coming-on-line facilities from counting toward AEPS requirements, thus limiting supply. All but one of these facilities are in New Jersey. The remaining planned facility is in Ohio.

Pursuant to AEPS, the impact on prices will occur when rate caps expire. Customers of Electric Division, Pike County Light & Power Company, Citizens Electric of Lewisburg, Wellsboro Electric Company, Duquesne Light Company, and Pennsylvania Power Company may be immediately impacted, and customers of PPL Electric Utilities Inc., may be impacted after December 31, 2009. Customers of West Penn Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, and PECO Energy Company may be impacted December 31, 2010.

Beyond general microeconomic theory of supply and demand, no reliable analysis was found and there are too many variables to quantify accurately the potential rise in the electricity due to the provision limiting AEPS purchases within the borders of the state. The exact impact on Commonwealth and political subdivision funds, therefore, is unknown.

Alternative Compliance Payments

According to the PUC, the new process for alternative compliance will require a more proactive role of the Commission similar to the manner New Jersey administers the program. This will likely require an annual stakeholder process. The PUC estimates a cost of about $265,000 annually, which will be assessed on the utilities themselves and deposited in the restricted revenue account that is used to fund the Commission.

Giving the PUC discretion to increase alternative compliance payments for solar power may have an impact on electric prices. Although the PUC would not knowingly choose a penalty in a manner that would impact prices negatively, this bill requires that the PUC promote the development of solar power. The reason solar is uncompetitive is because it is too expensive. The penalty, therefore, would have to be significant enough to make solar more attractive. There are too many variables, however, to predict with any certainty what the exact on prices would be.

Advanced Coal Combustion and Carbon Dioxide Sequestration

The Department of Conservation and Natural Resources does not anticipate any significant costs in meeting the requirements of this legislation. The department is authorized to collect fees, fines, civil penalties, rent and other payments to recover any costs sustained as a result of this bill. Any revenue generated via this legislation in the form of fees, fines, civil penalties, rent and other payments is presently unquantifiable since there is not enough information to determine the number of potential operators, the quantity of carbon dioxide to be sequestered, the number of fines and penalties to be assessed, etc.

Adding advanced coal combustion with limited carbon emissions as a Tier II and Tier III alternative energy source will not adversely impact energy prices because the technology will compete with the seven other Tier II and Tier III sources enumerated in AEPS and the bill. There is no mandate the advanced coal combustion be purchased vis-à-vis the other sources.

The Commission already inspects pipelines. Its current year budget, for example, includes $1.4 million for inspecting natural gas pipelines. Adding this new responsibility for carbon dioxide pipelines will likely increase its inspection costs. The PUC is unlikely to realize any cost increase in FY 2009/10 because the timeframe is too short to establish a working carbon sequestration system. In future years, however, the PUC will incur inspection costs assuming carbon sequestration pipelines are built. Without knowing the extent of such future systems, it is not possible to forecast such costs.

As stated earlier, the Commission receives assessments from the utilities it regulates, and it would assess the electric industry for any costs related to inspection of carbon dioxide pipelines. The U.S. Department of Transportation also provides some funding to the Commission for inspection of natural gas and hazardous materials pipelines, and it is possible in future years that the cost could be partially offset by Federal grants if Congress appropriates more funds for pipeline inspection and the U.S. Department of Transportation defines carbon dioxide as a hazardous substance. Such federal reimbursements are not guaranteed.

The other provisions for advanced coal combustion and carbon dioxide sequestration have no fiscal impact.

Sources
The following sources were consulted in preparation of this fiscal note: Department of Conservation and Natural Resources, Department of Environmental Protection, Public Utility Commission, PJM Interconnection, Citizens for Pennsylvania's Future, Pennsylvania Energy Association, PECO Energy Company, the U.S. Department of Energy, and the Center for the Study of Energy Markets, University of California Energy Institute.

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House Appropriations Committee, (D)

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General Note and Disclaimer: *This Fiscal Note was prepared pursuant to House Rule 19(a), and the elements considered and reported above are required by Section 5 of the rule. Estimates are calculated using the best information available. Actual costs and revenue impact incurred may vary from estimates.*