

Department of Legislative Services
Maryland General Assembly
2010 Session

FISCAL AND POLICY NOTE

House Bill 821

(Delegate Barkley, *et al.*)

Economic Matters

Finance

Net Energy Metering - Fuel Cell

This bill expands sources of generation eligible for net energy metering to include a fuel cell power system. A fuel cell is defined as an integrated power plant system containing a stack, tubular array, or other functionally similar configuration used to electrochemically convert fuel to electric energy. This may include an inverter and fuel processing system and other plant equipment to support the plant's operation or its energy conversion, including heat recovery.

Fiscal Summary

State Effect: None. The Public Service Commission (PSC) can implement the bill with existing budgeted resources.

Local Effect: Minimal.

Small Business Effect: Potential meaningful.

Analysis

Current Law: Net energy metering is defined as measurement of the difference between the electricity that is supplied by an electric company and the electricity that is generated by an eligible customer-generator and fed back to the electric company over the eligible customer-generator's billing period. An "eligible customer-generator" is a customer that owns and operates, or leases and operates, a biomass, solar, wind, or micro combined heat and power electric generating facility located on the customer's premises or contiguous property; interconnected and operated in parallel with an electric company's transmission and distribution facilities; and intended primarily to offset all or part of the

customer's own electricity requirements. The generating capacity of an eligible customer-generator for net metering may not exceed two megawatts.

Background: Fuel cells use the chemical energy of hydrogen to produce electricity through an electrochemical process. Fuel cells produce smaller quantities of greenhouse gases than traditional generation and emit only heat and water as byproducts. Fuel cells have the potential to power passenger vehicles, commercial buildings, homes, and even small devices such as laptop computers. Widespread deployment of fuel cell technology has been limited due to the high cost of fuel cell power systems, the unproven durability of these systems, and the availability of hydrogen as a fuel source.

Creating hydrogen to use in a fuel cell power system is an energy-intensive process, which may use renewable resources, or may use conventional fossil-fuel sources. Hydrogen production technologies fall into three general categories: (1) thermal processes – which reform natural gas, coal, renewable liquid fuels, or gasify biomass; (2) electrolytic processes – which use electricity to split water into hydrogen and oxygen; and (3) photolytic processes – which use light energy to split water into hydrogen and oxygen. Photolytic processes are in the very early stages of research.

Based on data submitted by electric companies, there are currently over 1,000 customer-generators in the State participating in net metering and approximately 90% of these customer-generators have solar installations. Over 55% of customer generators have 4 kilowatts or less of generating capacity and over 90% of customer-generators have 10 kilowatts or less of generating capacity.

The 2010 annual report on net energy metering has not been submitted to the General Assembly by PSC. The most recent data reported by PSC available on net energy metering is provided in **Exhibit 1**. During calendar 2008, the amount of generation increased from 364 kilowatts to 2,453 kilowatts. This represents only 0.16% of the current statewide limit of 1,500 megawatts for total net energy metering capacity. As of January 2009, the majority of net metering in the State was from solar generation. The generation sources are likely to have changed in the past 12 months, as additional generation sources have become eligible for net energy metering (micro combined heat and power) and additional grants have been provided for solar and small wind installations.

Exhibit 1
January 2009 Net Metering Capacity
(Kilowatts)

<u>Electric Utility</u>	<u>Solar</u>	<u>Wind</u>	<u>Biomass</u>	<u>Utility Total</u>
A & N Electric Cooperative	-	-	-	-
Baltimore Gas and Electric Company	302.8	0.8	-	303.6
Choptank Electric Cooperative	21.2	37.2	-	58.4
Delmarva Power and Light Company	85.4	27.7	-	113.1
Easton Utilities	-	-	-	-
Hagerstown Municipal Light Company	1.0	-	-	1.0
Town of Thurmont	-	-	-	-
Town of Berlin	-	-	-	-
Potomac Electric Power Company	713.3	-	-	713.3
Potomac Edison Company	1,035.5	144.9	-	1,180.4
Williamsport Light	-	-	-	-
Southern Maryland Electric Cooperative	83.2	-	-	83.2
Somerset Electric Cooperative	-	-	-	-
Total	2,242.4	210.6	-	2,453.0

Source: Public Service Commission

Small Business Effect: Net energy metering provides a meaningful benefit to eligible small businesses. During times of peak generation, excess electricity produced by a customer-generator is fed into the electric grid and the customer-generator is only charged for the net difference of electricity used each month. The practical effect is that customer-generators are able to use the utility grid as battery storage, so excess energy produced at any given instant can be captured for later use. Small businesses also benefit from net energy metering because it allows less expensive interconnection with the utility grid. Although the amount of fuel cell deployment in the State is currently minimal, it may provide a future meaningful benefit.

Additional Information

Prior Introductions: None.

Cross File: SB 529 (Senator Garagiola, *et al.*) - Finance.
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Information Source(s): Department of Natural Resources, Public Service Commission, U.S. Department of Energy, Department of Legislative Services

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