POLICY MATTERS OHIO

Cleveland: 3631 Perkins Avenue Suite 4C - East • Cleveland, Ohio, 44114 • tel: 216/361-9801 • fax: 216/361-9810
Columbus: 300 East Broad Street, Suite 490 • Columbus, Ohio, 43215 • tel: 614/ 221-4505 • fax: 614/ 224-8132
http://www.policymattersohio.org

A Regional Power Authority for the Midwest?
The Renewable Energy Borrowing Authority Proposal
September 24, 2009

The price of electricity varies greatly by region and by end-use sector, as well as among cities within a state. Within Ohio, northern cities identify high electricity rates as a barrier to job creation. Congresswoman Marcy Kaptur of Ohio's Ninth District, which lies along the shores of Lake Erie in the northwestern part of the state, has studied ways to lower energy costs in her district. She identified the lack of a public power marketing authority as a factor in high Midwestern energy rates. In response, she carried into the American Clean Energy and Security Act of 2009 a provision to establish a 'Renewable Energy Borrowing Authority" for the Midwest – a variation on the power marketing authorities that electrified rural America in the 20th century.

Map 1.

Source: Derived from: http://www.wapa.gov/regions/pmadmap.htm.
Note: Both WAPA and SWPA market power in Kansas.

In this briefing paper, Representative Kaptur's proposal is described and the history of public power marketing authorities is examined. Average electricity rates in states within the service territory of a power marketing authority are compared to rates in states outside of such a service

territory. Ohio's energy profile and costs within the state and its urban areas are examined. The potential role a public power marketing authority could play in the northeast and Midwest during a time of transition in energy markets is explored.

Regional power authorities, referred to as 'Federal Power Marketing Administrations' (FPMAs) in the overview of energy markets given in the website of the Department of Energy's Energy Information Administration (EIA), are entities of the federal government's utility system. The federal utility system is diverse, comprised of nine electric utilities and three federal agencies that generate electricity. One of the several structures it encompasses is that of the FPMA, which may generate and/or distribute energy from federal hydroelectric sources. There are four primary FPMAs in the continental United States: The Bonneville Power Authority (BPA), the Western Area Power Authority, the Southwestern Area Power Authority and the Southeastern Power Authority. The service areas of the primary FPMAs are shown in Map 1, page 1. They cover more than three quarters of the continental United States, with the notable exception of the Northeast and the Midwest.

While FPMA service territories cover three quarters of the continental United States and therefore include many cities, they were established to serve rural markets (See '*History of Power Marketing Authorities*,' p.3). They are not major players, accounting for only about one percent of total sales to ultimate consumers and less than one percent of the associated revenue. [1]

However, the fact that FPMAs distribute subsidized power and have access to subsidized financing has brought them recognition as economic development assets. The organizational model, in which public resources are administered at cost for a public benefit, has been emulated for non-energy related economic development: for example, the original idea for the Steel Valley Authority of Pennsylvania's Monongahela Valley was based on the Tennessee Valley Authority.

The Renewable Energy Borrowing Authority

Ohio's Ninth District is uniquely positioned to worry about energy rates and to anxiously anticipate renewable energy generation. Meandering along a third of Ohio's lake front property in the northwest quadrant of the state, energy rates here are considered high compared to the state as a whole; winds over Lake Erie are tantalizingly strong; and there is unused capacity in the industrial plants throughout the auto-dependent region that need new markets for production. Production for solar energy generation, based on the region's industrial legacy of in glass, is already a bright spot in a hard-hit manufacturing economy reliant on Chrysler and GM assembly plants and their suppliers. Production for wind components, compatible with some automotive manufacturing facilities, is both desired and needed.

Representative Kaptur sees both clean energy generation and component part manufacturing as offering rich opportunity to northwestern Ohio. To help capture that opportunity, she inserted an economic development provision into the American Clean Energy and Security Act of 2009 to plan for a regional power authority that could use its federally subsidized financing to encourage clean energy development in her district and state: a 'Renewable Energy Borrowing

[1] [1]Electric Power Industry Overview, 2007 http://www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html

Authority.' The new authority would be focused on financing and planning capability. Part of the first title (Title I: Clean Energy) of the American Clean Energy and Security Act of 2009, the proposal reads as follows:

Section 199: Development Corporation for Renewable Power Borrowing Authority

(a) Determination- No later than 6 months after the date of enactment of this Act, the Secretary of Energy, in coordination with the Secretary of Commerce, shall--
  (1) Determine any geographic area within the contiguous United States that lacks a Federal power marketing agency;
  (2) Develop a plan or criteria for the geographic areas identified in paragraph (1) regarding investment in renewable energy and associated infrastructure within an area identified in paragraph (1); and
  (3) Identify any Federal agency within an area in paragraph (1) that has, or could develop, the ability to facilitate the investment in paragraph (2).
(b) Report- The Secretary of Energy, in coordination with the Secretary of Commerce, shall provide the determinations made under subsection (a) to the Committee on Energy and Commerce of the House of Representatives.
(c) Establishment- Based upon the determinations made pursuant to subsection (a), the Secretary of Energy, in coordination with the Secretary of Commerce, shall recommend to the Committee on Energy and Commerce of the House of Representatives the establishment of any new Federal lending authority, including authorization of additional lending authority for existing Federal agencies, not to exceed $3,500,000,000 per geographic area identified in subsection (a)(1).
(d) Authorization- $25,000,000 is authorized to be appropriated for fiscal year 2010 to carry out the provisions of this section.[2]

According to Matt Kaplan, Senior Legislative Aide for Representative Kaptur, the purpose of the proposed entity is to provide an economic incentive to provide alternative energy power production capacity within the region. The goal is that the Regional Renewable Energy Borrowing Authority would act as an incentive for investors to build renewable energy generation and transmission facilities in Ohio and to develop component supply in the state as well. It is anticipated that the entity would not own, but would act as a financing arm with an equity stake in projects.

Power marketing authorities were developed in the first part of the last century, but according to Kaplan, this entity would be different.

"This public power entity will be leaner and very differently structured from its western counterparts," Kaplan asserts. "Many of the western models were created to sell power produced at dams owned by the federal government and promote western growth. This new structure is designed to decrease power rates, incentivize alternative energy development in the region and rebuild an aging infrastructure that seems incapable of competing in an industrialized world."

[2] Thomas (Library of Congress) at http://thomas.loc.gov/cgibin/query/F?c111:3:./temp/~c111KIGhLT:e398461:

History of Public Power Marketing Authorities

According to the Army Corps of Engineers website, public power marketing authorities were developed for technological, environmental, agricultural and political reasons in the early part of the twentieth century:

> *"Neglected waterways, demands for hydropower throughout the country, and calls for irrigation projects in the West drew attention to the nation's water resources at the beginning of the 20th century. Multipurpose partisans advocated the application of scientific management to insure efficient water use. This meant a program of basin-wide development…. Unlike the West, where irrigation became the focus of attention, the East was more concerned over hydropower development. Beginning in the early 1880s, when a plant in Appleton, Wisconsin, first used falling water to produce electricity, the construction of hydroelectric dams on the nation's waterways proliferated. These private dams threatened navigation and forced Congress, acting through the Corps of Engineers, to regulate dam construction. The Rivers and Harbors Acts of 1890 and 1899 required that dam sites and plans be approved by the secretary of war and the Corps of Engineers before construction. The General Dam Act of 1906 empowered the federal government to compel dam owners to construct, operate, and maintain navigation facilities without compensation whenever necessary at hydroelectric power sites.*
>
> *Private interests developed most power projects before World War I. …. President Franklin Roosevelt favored the development of federal hydropower projects to provide consumers with low-cost energy. During the New Deal, the Corps participated in three major hydroelectric power projects: Passamaquoddy Tidal Power Project in Maine, Bonneville Dam on the Columbia River, and Fort Peck Dam on the Missouri River. In 1937, Congress created the Bonneville Power Administration to dispose of the power and set the rates for the power generated at Bonneville dam.*[3]

The Bonneville Power Authority, providing power to Washington, Oregon, Idaho and the western edge of Montana, was authorized to build transmission lines, market power and propose rates, but the U.S. Army Corps of Engineers and the Bureau of Reclamation were to build and operate the dams that generated the electricity. By contrast, the Tennessee Valley Authority of 1933 generated its own power and supported electrification throughout Appalachia as an agency of the federal government.

The FPMAs of today provide service to large parts of the nation, but they are not uniformly supported as a service that government should provide. Within a decade of the establishment of the last regional authority, the Western Area Power Administration, in 1977, they became a target for privatization of the Regan Administration. The Heritage Foundation, in a 1986 memo advocating for the sale of these entities, provided additional updated and detailed history:

> *During World War 11, both BPA and TVA grew rapidly, and a third electricity generating entity, the Southwestern Power Administration, was created in 1943. By*

[3] The US Army Corps of Engineers: A Brief History, Multipurpose Waterway Development, http://www.usace.army.mil/history/pages/brief/07-development/develop.html

> *1945, the federal government owned 13 percent of the nation's total power generating capacity and 31 percent of its hydroelectric capacity. The following year, Congress authorized the creation of another FPMA, the Southeastern Power Marketing Administration. A fifth was added for Alaska in 1967, and a sixth in 1977--the Western Area Power Administration--which assumed all power marketing functions of the Bureau of Reclamation. Throughout the 1950s, TVA continued to expand its non-hydroelectric generating capacity, making it one of the nation's 1argest.utilities. In 1959 the TVA was authorized to issue revenue bonds, effectively freeing its construction program from the constraints of the congressional budget process. In 1974, the Bonneville Power Administration in the upper northwest received a similar authorization. By 1984, the Power Marketing Administrations and the Tennessee Valley Authority accounted for 9.5 percent of the nation's electrical capacity with some 174 plants in operation, sending electricity through 49,300 miles of federally owned transmission lines and supporting 39,000 employees to maintain and operate the system.*[4]

This description emphasizes the scope of federal involvement in electricity generation and distribution at the time, but the current description of federal power sales (2007) presents a more modest profile. According to the Energy Information Administration:

> *The Tennessee Valley Authority generates its own power. Generation owned by the U.S. Army Corps of Engineers (except for the North Central Division, for example, Saint Mary's Falls at Sault Ste. Marie, Michigan) and the U.S. Bureau of Reclamation is marketed by the Federal power marketing administrations: Bonneville, Southeastern, Southwestern, and Western. The four power marketing administrations also purchase energy for resale from other electric utilities in the United States and Canada. Federal electric utilities represent less than 1 percent of all electric utilities, provide approximately 7 percent of all generating capability and 4 percent of generation, and account for about 1 percent of total sales to ultimate consumers and less than 1 percent of the associated revenue.*[5]

Today's Federal Power Marketing Administrations

According to the Congressional Research Service, the U.S. Department of Energy today operates four public power marketing authorities: the Bonneville Power Administration (BPA), the Southeastern Power Administration (SEPA), the Southwestern Power Administration (SWPA), and the Western Area Power Administration (WAPA). These federal utilities are mandated to sell the wholesale electric power generated from federal dams to certain customers first: publicly or cooperatively owned utilities – and to sell "at the lowest possible rates to consumers consistent with sound business practices" under the Flood Control Act of 1944 (16 U.S.C. §825s). [6] These entities benefit from federal financing. The General Accounting Office summarizes several examples:

---

[4] Colulus, Milton R., Cutting the Deficit by Selling Federal Power Marketing Administrations, The Heritage Foundation, February 13, 1986 http://www.heritage.org/research/regulation/bg485.cfm

[5] Electric Power Industry Overview, 2007 http://www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html

[6] Lane, Nic, Power Marketing Administrations: Background and Current Issues< Congressional Research Service Report for Congress, January 3, 2007http://assets.opencrs.com/rpts/RS22564_20070103.pdf

- *Power marketing administrations (FPMAs) other than the Bonneville Power Administration (BPA) finance capital expenditures through federally appropriated debt repaid at various terms.*

- *BPA is responsible for repaying previously appropriated debt, federal borrowing, and nonfederal debt related to several capital expenditures.)*

- *The Tennessee Valley Authority finances capital expenditures through privately issued bonds that are highly rated due to perceived federal guarantee (despite notation on bonds)…. Authority to issue bonds and notes is set by Congress and currently cannot exceed $30 billion outstanding at any given time. A net financing cost can exist if FPMA interest rates are below Treasury rates"*[7]

In sum, the role of the FPMAs has developed from one of distributing and sometimes generating power to one of financing fixed assets through federally subsidized channels. The FMPAs are similar but not identical in their activities and authorized powers.

Comparison of Rates: States with PFPMA, Compared to States Without a PFPMA

Power marketing authorities do not determine electricity rates across their broad regions: rates are more closely related market factors. However, state-by-state, they may play a significant role.[8] Because there can be significant impact state to state, an analysis of rate difference among FPMA and non-FPMA states was undertaken. Electricity rates in states not included in FPMA service territory were found to be about 24% higher, on the basis of a weighted average, than in states with a FPMA. Again, it must be noted that more causal variables include market supply and demand factors such as age, population density, economy and unique challenges of geography (Hawaii) as well as generation type and age, fuel mix and transmission assets.

Ohio is one of 17 states along with the District of Columbia that are not serviced by a Power Marketing Authority. As shown on Map 1, p. 1, these non-FPMA states are in the upper Midwest and the Northeast, as well as Alaska and Hawaii. Tables 1, 2, and 3 present the state average cost of electricity in cents per kilowatt hour (kWh). The averages are taken from the monthly year-to-date summary of the Energy Information Administration.

[7] General Accounting Office, Federal Electric Subsidies: Information on Research Funding, Tax Expenditures, and Other Activities That Support Electricity Production, October 2007, at http://gao.gov/new.items/d08102.pdf

[8] For example, in the Pacific Northwest, the Bonneville Power Administration provides about 45 percent of the electricity for Washington, Oregon, Idaho and Western Montana, drawing on 31 federally owned dams, one nuclear plant and several wind-energy projects. BPA also owns and operates about three-quarters of the region's high-voltage electric grid, comprising 15,000 miles of power lines.NW Energy Coalition: Regional energy Future at http://www.nwenergy.org/publications/reports/citizens-energy-plan/regional-electricity-future

Table 1: Overview of Comparative Cost of Electricity Across States (cents/kWh)

Cross-sector Average Cost of Electricity	Cents/kWh
Highest (HI)	19.83
Highest Contiguous U.S. (CT)	17.38
Highest FPMA State (CA)	12.96
Ohio	**8.96**
Lowest non-FPMA State (IN)	7.61
Lowest FPMA State (WY)	5.95

Source: Policy Matters Ohio based on DOE/EIA, Table 5.6.B[9]

Table 1 illustrates the difference in average electricity rates across the nation. On the average, the cost of energy in Hawaii, the state with the highest prices on the average, is two and a third times higher than in Wyoming. Hawaii, an island state, may be considered a special circumstance, but even within the continental United States, Connecticut is twice as high as Wyoming.

Table 2 shows unweighted regional averages across customer classes and for all sectors. Differences are particularly evident in the industrial sector.

Table 2: Unweighted [10]Averages in Electricity Costs (cents/kWh)

Entity	Weighted Average Rate
Western Power Marketing Authority	9.99
Bonneville Power Marketing Authority	7.01
Southeastern Power Marketing Authority	9.58
Southwestern Power Marketing Authority	7.49
No FPMA	**11.57**
FPMA	**9.12**
US Average	**9.86**

Source: Policy Matters Ohio based on DOE/EIA, Table 5.6.B (See FN #9)

As a group and on a weighted basis, the states outside of FPMA regions have average rates 17 percent higher than the national average; states covered by an FMPA have rates that average about 8 percent less than the national average. The difference between states within a FPMA service territory and those outside is about 26 percent.

[9] Electric Power Monthly September 2009, Table 5.6.B: "Average Retail Price of Electricity to Ultimate Customers **by** End-Use Sector, by State, Year-to-Date through June 2009 and 2008," September 2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

[10] The US average is calculated in the same manner as the individual states, so it is in essence weighted in a manner the regional tallies are not.

Table 3: Weighted Average Electricity Rates of FPMA Regions (Cents/kWh)

Entity	Residential	Commercial	Industrial	Transportation	All Sectors
WAPA	9.89	8.30	6.12	3.60	8.15
BPA	7.90	7.10	5.06	4.25	6.90
SEPA	10.07	8.82	6.54	5.52	8.65
SWPA	8.85	7.53	5.72	5.54	7.55
Non FPMA	14.82	12.93	10.32	6.14	13.01
US Average	11.47	10.15	6.93	11.47	9.86

Source: Policy Matters Ohio based on DOE/EIA,[11] Table 5.6.B and Consumption data[12]

Table 4: Ohio cost compared to states outside of a FPMA Service Territory (Cents/kWh)

Rank	State	Average Cost
1	Hawaii	19.83
2	Connecticut	17.38
3	Maine	15.82
4	New Hampshire	15.64
5	New York	15.55
6	Alaska	15.05
7	New Jersey	14.6
8	Rhode Island	14.32
9	Delaware	13.75
10	Massachusetts	13.26
11	Maryland	13.24
12	Vermont	12.76
13	Washington DC	12.21
14	Pennsylvania	9.58
15	Michigan	9.47
16	Wisconsin	9.45
17	**Ohio**	**8.96**
18	Indiana	7.61

Source: Policy Matters Ohio based on DOE/EIA,[13] Table 5.6.B

Ohio ranks the second lowest of the non FPMA states in terms of cost per kilowatt hour, but when compared with the 33 states within an FMPA service territory, it ranks seventh.

[12] DOE/EIA, Table 5.6.B (see FN #9) and EIA, State Data Systems: Consumption, physical units 1960 – 2007 at http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_all_phy.csv

Table 5: Ohio Ranked in Comparison to States Within a FPMA Service Territory (Cents/kWh)

	State	Average cost
1	California	12.96
2	Florida	11.56
3	Texas	10.44
4	Nevada	9.75
5	Illinois	9.28
6	Virginia	9.06
7	**Ohio**	**8.96**
8	Mississippi	8.93
9	Arkansas	8.92
1	Alabama	8.92
2	Tennessee	8.80
3	Georgia	8.79
4	North Carolina	8.45
5	South Carolina	8.30
6	Minnesota	8.11
7	Kansas	8.10
8	New Mexico	8.09
9	Colorado	7.87
10	Arizona	7.84
11	Louisiana	7.67
12	Oregon	7.56
13	Montana	7.24
14	Iowa	7.17
15	South Dakota	7.16
16	Oklahoma	7.10
17	Missouri	7.04
18	Nebraska	6.92
19	Washington	6.92
20	Utah	6.64
21	North Dakota	6.60
22	West Virginia	6.57
23	Kentucky	6.52
24	Idaho	6.22
25	Wyoming	5.95

Source: Policy Matters Ohio, based on DOE/EIA Table 5.6.B

Midwestern states stand out from New England states and from Hawaii, with rates roughly a quarter to a third lower. This reflects factors such as mix of fuels, age of equipment, density of markets and transmission capabilities. Comparing Tables 4 and 5 reveals that in terms of averages among states, the rates of the Midwestern states that are outside of power marketing service territories would be comparable with the costlier states within the FPMA territories.

A comparison of the average cost of electricity in each FPMA service territory reveals price discrepancy among the regions and highlights the price advantage over states not served by a Power Marketing Authority. Power in the Bonneville Power Authority is cheapest across all categories; attributable to the relatively small population it serves, compared to the Western Area Power Authority or highly dense areas like the Northeast; in addition, it serves a significant share of the market demand, providing about 45 percent of the electricity for Washington, Oregon, Idaho and Western Montana.[14]

Table 6: Cost of Electricity by Customer Class, by FPMA coverage (cents/kWh)

BPA	**Residential**	**Commercial**	**Industrial**	**Transportation**	**All Sectors**
Idaho	7.36	6.28	4.84	--	6.22
Oregon	8.64	7.95	5.1	6.74	7.56
Washington	7.71	7.08	5.24	6.02	6.92
Average	7.90	7.10	5.06	4.25	6.90
SEPA	**Residential**	**Commercial**	**Industrial**	**Transportation**	**All Sectors**
Alabama	10.58	10.09	6.24	--	8.92
Florida	12.37	10.97	9.44	10.53	11.56
Georgia	9.96	9.01	6.24	6.81	8.79
Illinois	11.49	8.4	7.63	8.79	9.28
Kentucky	8.32	7.61	4.89	--	6.52
Mississippi	10.12	9.67	6.85	--	8.93
North Carolina	9.96	7.95	5.85	6.74	8.45
South Carolina	10.23	8.65	5.78	--	8.3
Tennessee	9.48	9.7	6.86	11.47	8.8
Virginia	10.54	8.31	7	8.58	9.06
West Virginia	7.72	6.7	5.2	7.81	6.57
Average	10.07	8.82	6.54	5.52	8.65
SWPA	**Residential**	**Commercial**	**Industrial**	**Transportation**	**All Sectors**
Arkansas	9.4	7.72	6.03	12.66	7.84
Kansas	9.47	8.01	6.28	--	8.1
Louisiana	8.67	8.37	5.93	9.87	7.67
Missouri	8.14	6.65	5.27	5.17	7.04
Oklahoma	8.59	6.91	5.07	--	7.1
Average	8.85	7.53	5.72	5.54	7.55

Source: Policy Matters Ohio, based on DOE/EIA Table 5.6.B

[14] NW Energy Coalition: Regional energy Future at http://www.nwenergy.org/publications/reports/citizens-energy-plan/regional-electricity-future

Table 6: Cost of Electricity by Customer Class, by FPMA coverage (cents/kWh) (Continued)

WAPA	Residential	Commercial	Industrial	Transportation	All Sectors
Arizona	10.51	9.05	6.39	--	9.23
California	14.70	12.98	9.79	8.00	12.96
Colorado	9.55	7.63	5.94	7.36	7.87
Iowa	9.81	7.28	5.05	--	7.17
Minnesota	9.98	7.81	6.30	7.68	8.11
Montana	8.70	8.23	5.34	--	7.24
North Dakota	7.24	6.62	5.70	--	6.60
Nebraska	7.94	7.08	5.59	--	6.92
New Mexico	9.87	8.42	5.84	--	8.09
Nevada	12.43	10.21	7.30	9.30	9.75
South Dakota	8.12	6.82	5.65	--	7.16
Texas	12.96	10.08	7.43	9.77	10.44
Utah	8.33	6.91	4.70	8.28	6.64
Wyoming	8.28	7.14	4.69	--	5.95
Average	9.89	8.30	6.12	3.60	8.15
No PMA	**Residential**	**Commercial**	**Industrial**	**Transportation**	**All Sectors**
Alaska	17.21	14.5	12.58	--	15.05
Connecticut	20.19	15.69	15.06	13.53	17.38
Delaware	13.86	12.07	9.51	--	12.21
District of Columbia	12.99	14.07	9.7	12.44	13.75
Hawaii	22.89	20.41	16.74	--	19.83
Illinois	11.49	8.4	7.63	8.79	9.28
Indiana	9.35	8.26	5.85	9.68	7.61
Maine	15.51	12.86	10.6	--	13.26
Maryland	14.89	12.27	10.31	11.65	13.24
Massachusetts	17.84	18.01	11.38	6.82	15.82
Mississippi	10.12	9.67	6.85	--	8.93
New Hampshire	16.57	15.32	14.17	--	15.64
New Jersey	16.11	14.22	11.37	20.41	14.6
New York	17.79	14.99	10.86	14.5	15.55
Ohio	**10.35**	**9.59**	**6.88**	**11.03**	**8.96**
Pennsylvania	11.43	9.55	7.29	7.81	9.58
Rhode Island	16.03	13.44	13.03	--	14.32
Vermont	14.89	12.8	9.45	--	12.76
Wisconsin	12.1	9.54	6.78	--	9.45
Average	14.82	12.93	10.32	6.14	13.01

Source: Policy Matters Ohio based on DOE/EIA, Table 5.6.B.

A look within Ohio

Ohio's electricity costs are not much different from those of states within a FPMA. Unweighted residential rates average 10.59 cents per kWh, similar to those in the Southwestern Power Authority district; commercial rates of 9.59 are higher than the FMPA regions and industrial rates of 6.88 are similarity to the average FMPA rates. The overall rate of 8.96 is close to the FMPA weighted average of 9.12 cents per kilowatt-hour.

In its state energy profile, the Energy Information Administration lists the following characteristics of Ohio's market for energy:

- Energy consumption in Ohio's industrial sector ranks among the highest in the Nation.
- Ohio has the second-highest refining capacity in the Midwest.
- A proposed pipeline from the Rocky Mountains could increase Ohio's total natural gas supply in the near future.
- In August 2003, a transmission failure in Ohio led to the largest blackout in North American history, affecting over 50 million people.
- Coal typically fuels about nine-tenths of net electricity generation in Ohio.[15]

It goes on to highlight the important role of coal in fueling generation in the state:

> "*Although Ohio is a moderate producer of coal, it is also a substantial consumer of coal; Ohio's production typically supplies less than one-third of State consumption. Coal mines concentrated in the Appalachian Basin in the eastern part of the State supply less than one-third of State consumption. The remaining coal is brought in primarily by railcar and river barge from West Virginia, Wyoming, Kentucky, and Pennsylvania. Ohio ranks fourth in the United States in coal consumption. Although large amounts of coal are used by industry, its primary use is for electricity generation, and coal fuels close to nine-tenths of Ohio's total generation. Two nuclear plants located along Lake Erie supply most of the remainder of the State's generation.*
>
> *Although it is one of the Nation's top generators of electricity, Ohio is also among the Nation's top net importers of electricity. Ohio's total electricity consumption is high due primarily to the State's energy-intensive industrial sector, which accounts for two-fifths of the State's electricity consumption. The residential sector consumes around one-third of the State's electricity, with nearly one-fifth of Ohio households relying on electricity as their primary source of energy for home heating. In August 2003, a transmission failure in northeastern Ohio led to the largest blackout in North American history, affecting an estimated 50 million people in the northeastern United States and Canada. Over half a million Ohio homes and businesses lost power during the incident*."[16]

[15] United States Department of Energy, Energy Information Administration, State Energy Profile for Ohio at http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=OH

[16] United States Department of Energy, Energy Information Administration, State Energy Profile for Ohio at http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=OH

The average price of electricity in Ohio, at 8.96 cents per kilowatt-hour, is a full cent percent lower than the national average of 9.86, a difference of 10 percent, although it is not within a service territory of a FPMA. The key variables causing this difference are described in the EIA's state profile: a heavy dependence on coal, one of the cheapest fuels. Table 7, below, presents cost data from 2007, published August of 2009:

Table 7: Electric Power Sector Energy Price Estimates by Source, 2007
(Nominal Dollars per Million Btu)

Coal	Natural Gas	Petroleum	Nuclear	Biomass	Electricity Imports	Total
1.78	7.11	7.93	0.46	3.22	18.25	2.68

Policy Matters Ohio, Based on US Department of Energy, Energy Information Administration, State Energy Data, Table S6a: Consumption, Price and Expenditure Data through 2007: August 28, 2009 at http://www.eia.doe.gov/emeu/states/hf.jsp?incfile=sep_sum/plain_html/sum_pr_eu.html

A lack of investment in fixed assets may be another source of rate containment but also of trouble, as indicated by the mention in the state energy profile of transmission problems.

Although overall electricity rates in Ohio appear favorable relative to the rest of the nation, there is wide variation by metropolitan area. Prices in eight major cities range from a low of seven cents per kilowatt-hour for industrial customers in Canton to a high of 13 cents per kilowatt-hour for residential customers in Cleveland, Cincinnati and Toledo in Cleveland. A more detailed look at Ohio metropolitan areas, by class of customer, shows electricity prices by end-use sector are fairly consistent within each of the eight major cities. One notable exception is in Dayton, where residential customers pay between 3 to 4 cents more per kilowatt-hour than do commercial or industrial customers. Canton and Columbus in particular have very low rates for Industrial consumers, paying 4 cents less than Industrial consumers in Cleveland pay (Table 8).

Table 8: Average Price of Electricity by Sector in Major Ohio Cities (cents/kWh)

City	Residential	Commercial	Industrial
Akron	12	11	9
Canton	10	7	7
Cincinnati	13	11	9
Cleveland	13	13	11
Columbus	12	11	7
Dayton	12	9	7
Toledo	13	12	9
Youngstown	12	11	9

Source: Policy Matters Ohio based on Public Utilities Commission of Ohio, "Ohio Utility Rate Survey" 8/15/2009.

Conclusion

Representative Marcy Kaptur has inserted a new provision into proposed climate legislation designed to address transition in energy sources and markets. The details of this proposed new form of FPMA, the "Renewable Power Borrowing Authority," remain to be worked out. The proposal fits within the model that underpinned the development of the FPMAs: There is a need for new kinds of energy generation, a need for capital and a need for planning.

A comparison of electricity rates among states with and without power marketing authorities shows that the electricity costs in places not served by a federal power marketing authority are about 26 percent higher than in places within a service territory. This is not a causal factor, but may be a contributing factor.

Ohio's rates are not very different than those served by a FPMA: at 8.96 cents per kWh, Ohio is lower than the weighted average of 9.12 cents for FMPA service territories and also below the national average of 9.86 cents. However, changes to the energy markets are already taking place, with or without climate legislation. The fuel mix that keeps Ohio's rates low would change dramatically over time if legislation like the American Clean Energy and Security Act of 2009 is enacted into law. Ohio would face more significant transition impact than other states.

The organizational form of the public power authority, developed in response to economic and environmental needs of an earlier era, presents itself as a vehicle for opportunity at this time of transition. The concept of a public authority that is large enough to plan for, finance and plan for and finance new electricity generation assets seems a useful, appropriate and desirable tool for any region in an age of austerity. The Regional Renewable Energy Borrowing Authority deserves notice and careful consideration.

Table A-1: Ranking of State Average Residential Electricity Prices by Sector (in cents/kWh)

Rank	State	Residential
1	Hawaii	22.89
2	Connecticut	20.19
3	Massachusetts	17.84
4	New York	17.79
5	Alaska	17.21
6	New Hampshire	16.57
7	New Jersey	16.11
8	Rhode Island	16.03
9	Maine	15.51
10	Maryland	14.89
11	Vermont	14.89
12	California	14.7
13	Delaware	13.86
14	District of Columbia	12.99
15	Texas	12.96
16	Nevada	12.43
17	Florida	12.37
18	Wisconsin	12.1
19	Illinois	11.49
	U.S. Total	**11.47**
20	Michigan	11.43
21	Pennsylvania	11.43
22	Alabama	10.58
23	Virginia	10.54
24	Arizona	10.51
25	Ohio	10.35
26	South Carolina	10.23
27	Mississippi	10.12
28	Minnesota	9.98
29	Georgia	9.96
30	North Carolina	9.96
31	New Mexico	9.87
32	Iowa	9.81
33	Colorado	9.55
34	Tennessee	9.48
35	Kansas	9.47
36	Arkansas	9.4
37	Indiana	9.35
38	Montana	8.7
39	Louisiana	8.67
40	Oregon	8.64
41	Oklahoma	8.59

42	Utah	8.33
43	Kentucky	8.32
44	Wyoming	8.28
45	Missouri	8.14
46	South Dakota	8.12
47	Nebraska	7.94
48	West Virginia	7.72
49	Washington	7.71
50	Idaho	7.36
51	North Dakota	7.24

Source: Policy Matters Ohio based on Energy Information Administration, from Electric Power Monthly September 2009, Table 5.6.B: "Average Retail Price of Electricity to Ultimate Customers **by** End-Use Sector, by State, Year-to-Date through June 2009 and 2008," September 2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

Table A-2: Ranking of State Average Commercial Electricity Prices by Sector (in cents/kWh)

Rank	State	Commercial
1	Hawaii	20.41
2	Massachusetts	18.01
3	Connecticut	15.69
4	New Hampshire	15.32
5	New York	14.99
6	Alaska	14.5
7	New Jersey	14.22
8	District of Columbia	14.07
9	Rhode Island	13.44
10	California	12.98
11	Maine	12.86
12	Vermont	12.8
13	Maryland	12.27
14	Delaware	12.07
15	Florida	10.97
16	Nevada	10.21
	U.S. Total	**10.15**
17	Alabama	10.09
18	Texas	10.08
19	Tennessee	9.7
20	Mississippi	9.67
21	Ohio	9.59
22	Pennsylvania	9.55
23	Wisconsin	9.54
24	Michigan	9.4
25	Arizona	9.05
26	Georgia	9.01
27	South Carolina	8.65
28	New Mexico	8.42
29	Illinois	8.4
30	Louisiana	8.37
31	Virginia	8.31
32	Indiana	8.26
33	Montana	8.23
34	Kansas	8.01
35	North Carolina	7.95
36	Oregon	7.95
37	Minnesota	7.81
38	Arkansas	7.72
39	Colorado	7.63
40	Kentucky	7.61
41	Iowa	7.28

42	Wyoming	7.14
43	Nebraska	7.08
44	Washington	7.08
45	Oklahoma	6.91
46	Utah	6.91
47	South Dakota	6.82
48	West Virginia	6.7
49	Missouri	6.65
50	North Dakota	6.62
51	Idaho	6.28

Source: Policy Matters Ohio based on Energy Information Administration, from Electric Power Monthly September 2009, Table 5.6.B: "Average Retail Price of Electricity to Ultimate Customers **by** End-Use Sector, by State, Year-to-Date through June 2009 and 2008 ," September 2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

Table A-3: Ranking of State Average Industrial Electricity Prices by Sector (in cents/kWh)

Rank	State	Industrial
1	Hawaii	16.74
2	Connecticut	15.06
3	New Hampshire	14.17
4	Rhode Island	13.03
5	Alaska	12.58
6	Massachusetts	11.38
7	New Jersey	11.37
8	New York	10.86
9	Maine	10.6
10	Maryland	10.31
11	California	9.79
12	District of Columbia	9.7
13	Delaware	9.51
14	Vermont	9.45
15	Florida	9.44
16	Illinois	7.63
17	Texas	7.43
18	Nevada	7.3
19	Pennsylvania	7.29
20	Michigan	7.21
21	Virginia	7
	U.S. Total	**6.93**
22	Ohio	6.88
23	Tennessee	6.86
24	Mississippi	6.85
25	Wisconsin	6.78
26	Arizona	6.39
27	Minnesota	6.3
28	Kansas	6.28
29	Alabama	6.24
30	Georgia	6.24
31	Arkansas	6.03
32	Colorado	5.94
33	Louisiana	5.93
34	Indiana	5.85
35	North Carolina	5.85
36	New Mexico	5.84
37	South Carolina	5.78

38	North Dakota	5.7
39	South Dakota	5.65
40	Nebraska	5.59
41	Montana	5.34
42	Missouri	5.27
43	Washington	5.24
44	West Virginia	5.2
45	Oregon	5.1
46	Oklahoma	5.07
47	Iowa	5.05
48	Kentucky	4.89
49	Idaho	4.84
50	Utah	4.7
51	Wyoming	4.69

Source: Policy Matters Ohio based on Energy Information Administration, from Electric Power Monthly September 2009, Table 5.6.B: "Average Retail Price of Electricity to Ultimate Customers **by** End-Use Sector, by State, Year-to-Date through June 2009 and 2008 ," September 2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

Table A-4: Ranking of State Average Electricity Prices (in cents/kWh)

Rank	State	All Sectors
1	Hawaii	19.83
2	Connecticut	17.38
3	Massachusetts	15.82
4	New Hampshire	15.64
5	New York	15.55
6	Alaska	15.05
7	New Jersey	14.6
8	Rhode Island	14.32
9	District of Columbia	13.75
10	Maine	13.26
11	Maryland	13.24
12	California	12.96
13	Vermont	12.76
14	Delaware	12.21
15	Florida	11.56
16	Texas	10.44
	U.S. Total	**9.86**
17	Nevada	9.75
18	Pennsylvania	9.58
19	Michigan	9.47
20	Wisconsin	9.45
21	Illinois	9.28
22	Arizona	9.23
23	Virginia	9.06
24	Ohio	8.96
25	Mississippi	8.93
26	Alabama	8.92
27	Tennessee	8.8
28	Georgia	8.79
29	North Carolina	8.45
30	South Carolina	8.3
31	Minnesota	8.11
32	Kansas	8.1
33	New Mexico	8.09
34	Colorado	7.87
35	Arkansas	7.84
36	Louisiana	7.67
37	Indiana	7.61

38	Oregon	7.56
39	Montana	7.24
40	Iowa	7.17
41	South Dakota	7.16
42	Oklahoma	7.1
43	Missouri	7.04
44	Nebraska	6.92
45	Washington	6.92
46	Utah	6.64
47	North Dakota	6.6
48	West Virginia	6.57
49	Kentucky	6.52
50	Idaho	6.22
51	Wyoming	5.95

Source: Policy Matters Ohio based on Energy Information Administration, from Electric Power Monthly September 2009, Table 5.6.B: "Average Retail Price of Electricity to Ultimate Customers **by** End-Use Sector, by State, Year-to-Date through June 2009 and 2008 ," September 2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

Sources

Bonneville Power Administration, http://www.bpa.gov/corporate/

Bonneville Power Administration, "2008 BPA Facts," http://www.bpa.gov/corporate/about_BPA/Facts/FactDocs/BPA_Facts_2008.pdf

Columbus, Milton R. "Cutting the Deficit by Selling Federal Power Marketing Administrations." The Heritage Foundation. 13 Feb 1986.17Sept2009http://www.heritage.org/research/regulation/bg485.cfm >

The Energy Information Administration. "Electric Power Industry Overview: 2007." Energy Information Administration. http://www.eia.doe.gov/cneaf/electricity/page/prim2/toc2.html

Lane, Nic. CRS Report for Congress. Power Marketing Administrations: Background and Current Issues." Congressional Research Service. 1/3/07 .http://assets.opencrs.com/rpts/RS22564_20070103.pdf>

NW Energy Coalition: Regional energy Future at http://www.nwenergy.org/publications/reports/citizens-energy-plan/regional-electricity-future
Public Utilities Commission of Ohio, "Ohio Utility Rate Survey" pg 4-5. 6/15/2009. http://www.puco.ohio.gov/emplibrary/files/util/UtilityRateSurvey/July09.pdf

Southeastern Power Administration, http://199.44.84.82/

Southwestern Power Administration, http://www.swpa.gov/

Thomas (Library of Congress), American Clean energy and Security Act of 2009 As Passed in the House, HR 2454, http://thomas.loc.gov/cgibin/query/F?c111:3:./temp/~c111KIGhLT:e398461:

The U.S Army Corp of Engineers. "The US Army Corps of Engineers: A Brief History; Multipurpose Waterway Development." US Army Corps of Engineers. 12 Sept 2009 http://www.usace.army.mil/history/pages/brief/07-development/develop.html

U. S. Department of Energy, Energy Information Administration; Electric Power Monthly with data for May 2009; "Table 5.6.B. Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State, Year-to-Date through May 2009 and 2008 (Cents per kilowatt-hours)," pg 108, 8/15/2009, http://tonto.eia.doe.gov/ftproot/electricity/epm/02260908.pdf

U.S. Department of Energy. "Power Marketing Administrations." 17 Sept 2009http://www.energy.gov/organization/powermarketingadmin.htm.energy.gov/organization/powermarketingadmin.htm

The United States Government Accountability Office. “Federal Electric Subsidies: Information on Research Funding, Tax Expenditures, and Other Activities That Support Electricity Production.” The U.S Government Accountability Office. Oct 2007. 17 Sept 2009. http://gao.gov/new.items/d08102.pdf>

U.S. General Accounting Office. “Power Marketing Authorities: Their Ratesetting Practices Compared With Those of Nonfederal Utilities.” DIANE Publishing, 2000.

Western Area Power administration, http://www.wapa.gov/