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April 23, 2009

VIA FEDERAL EXPRESS

Public Utilities Commission of Ohio  
Docketing Division  
180 East Broad Street  
Columbus, Ohio 43215-3793

Re: Enclosed Amended Application for Filing in Case No. 09-119-EL-AEC

Dear Sir or Madam:

Enclosed please find an original and seven (7) copies of the *Testimony of Michael F. Tanchuk, Paul A. Coomes, Henry W. Fayne and James Burns Riley on Behalf of Ormet Primary Aluminum Corporation* in Case No. 09-119-EL-AEC. Also enclosed are two extra copies of each document to be date-stamped and returned to me in the enclosed, self-addressed Federal Express envelope.

Sincerely,



Emma F. Hand

Enclosures

This is to certify that the images appearing are an  
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**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

**In the Matter of the Application of Ormet  
Primary Aluminum Corporation for  
Approval of a Unique Arrangement  
with Ohio Power Company and  
Columbus Southern Power Company**

**Case No. 09-119-EL-AEC**

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**DIRECT TESTIMONY OF MICHAEL F. TANCHUK  
ON BEHALF OF ORMET PRIMARY ALUMINUM CORPORATION**

**April 23, 2009**

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, EMPLOYER AND  
CURRENT POSITION.**

**A. My name is Mike Tanchuk. I am the President and Chief Executive Officer of Ormet Corporation ("Ormet"), 43840 State Road 7, P.O. Box 176, Hannibal, Ohio 43931, which is the parent corporation of a number of companies, including Ormet Primary Aluminum Corporation ("Ormet Primary"). I also serve as a member of Ormet's Board of Directors.**

**Q. ARE YOU THE SAME MICHAEL TANCHUK WHO EXECUTED AN AFFIDAVIT  
IN THIS PROCEEDING?**

**A. Yes. I executed an affidavit in my capacity as President and Chief Executive Officer of Ormet verifying the accuracy of the information contained in the Application. See Application, Attachment F.**

**Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE METALS INDUSTRY.**

**A. I have more than thirty-two (32) years of experience in the metals industry and have managed nine aluminum smelters in the United States and Iceland. After graduating from Bucknell University with a Bachelor's Degree in Civil Engineering in 1977, I began work at Inland Steel before joining Reynolds Metals Company in 1985 in Richmond, Virginia. I held a number of environmental management and superintendent positions at Reynolds'**

1 Headquarters and at its Massena, New York smelting operations. In 1998, I became the  
2 Plant Manager at Reynolds' Longview, Washington plant. Following the Alcoa/Reynolds  
3 merger in 2000, I became the Operations Manager at Alcoa's Massena, N.Y. facilities,  
4 which included two smelters. In 2001, I became President of the Northwest Region of  
5 Alcoa's Primary Business Unit, Alcoa Primary Metals. I later served as Vice President and  
6 Plant Manager of Century Aluminum of Kentucky for three years. I then became Vice  
7 President and Managing Director of Nordural, a division of Century Aluminum in  
8 Grundartangi, Iceland for one year before coming to Ormet.

9 **Q. HOW LONG HAVE YOU BEEN ASSOCIATED WITH ORMET?**

10 A. I joined Ormet as President and CEO on May 1, 2007 and became a Director in May 2007.

11 **Q. WHAT IS ORMET PRIMARY'S BUSINESS?**

12 A. Ormet Primary owns and operates an aluminum reduction facility (or aluminum smelter) in  
13 Hannibal, Ohio.

14 **Q. PLEASE DESCRIBE THE HANNIBAL FACILITY.**

15 A. The Hannibal facility, encompassing 256 acres, is located on the Ohio River in Hannibal,  
16 Ohio. It consists of six potlines, and when all six are in operation, it is among the largest  
17 aluminum smelters in the United States, with the capability of producing approximately  
18 263,000 metric tons of molten aluminum annually.

19 **Q. HOW IS THE ECONOMIC VIABILITY OF AN ALUMINUM SMELTER**  
20 **DETERMINED?**

21 A. Economic viability of an aluminum smelter is essentially determined by the relationship  
22 between the retail market price of an aluminum smelter's product, aluminum, and its costs,  
23 chiefly the cost of electricity.

1    **Q.    WHAT ARE THE PRINCIPAL OPERATING COSTS OF ORMET'S ALUMINUM**  
2       **SMELTER IN HANNIBAL, OHIO?**

3    A.    One of the largest principal costs for the production of aluminum products is electricity.  
4       When fully operational, the Hannibal aluminum reduction facility utilizes up to 540 MW of  
5       electricity 24 hours per day, 365 days per year. Electricity is a fundamental raw material in  
6       the aluminum industry. Currently, electricity constitutes approximately 35 percent of  
7       Ormet's total cash costs or 39 percent of the cash smelter costs. When competitively  
8       priced electricity is available, it constitutes approximately 30 percent of the cost of  
9       producing aluminum in the United States and about 20 percent of the cash cost of the most  
10      competitive smelters. However, when electric rates are excessive, particularly when the  
11      retail price of aluminum is low, aluminum reduction facilities simply cannot operate.

12   **Q.    HOW IS THE RETAIL PRICE OF ALUMINUM DETERMINED?**

13   A.    The selling price of basic aluminum is determined by global supply and demand, and is set  
14      by prices published on the London Metal Exchange ("LME"). Ormet has no ability to  
15      determine the selling price of its product. Ormet's ability to compete globally is therefore  
16      determined by its cost of production.

17   **Q.    WHY IS IT IMPORTANT FOR ORMET TO HAVE STABLE ACCESS TO**  
18       **ELECTRICITY AT RATES AT WHICH IT CAN REMAIN COMPETITIVE?**

19   A.    If Ormet is to keep its Hannibal Facilities in operation, it must be able to procure electricity  
20      at a price that will enable it to remain competitive. Ormet's power supply must be stable.  
21      Ormet operates at about a 98 percent load factor around the clock. Electricity is a vital raw  
22      material for the production of aluminum. The six potlines Ormet operates at its Hannibal  
23      Facilities must be kept energized at all times to keep the metal in them molten. If

1 electricity to the potline is reduced sufficiently that the metal solidifies, it takes several  
2 months and millions of dollars to bring the potline back into operation.

3 **Q. HAS ORMET REORGANIZED ITS OPERATIONS IN THE PAST?**

4 A. On January 30, 2004, Ormet filed for Chapter 11 Bankruptcy, along with its affiliates and  
5 parent company. Subsequently, due to a labor strike and increasing power costs, Ormet  
6 was forced to shut down its Hannibal Facilities. On December 15, 2004, the Bankruptcy  
7 Court approved Ormet's plan of reorganization, and Ormet emerged from bankruptcy in  
8 April 2005. Subsequently, Ormet was able to settle with its union and end the labor strike,  
9 however, Ormet could not immediately restart its Hannibal Facilities because the price of  
10 electricity that Ormet was able to obtain was too high relative to the price of aluminum. It  
11 was not until Ormet entered into a stipulation with AEP Ohio effective on January 1, 2007  
12 that Ormet was able to obtain power at a cost low enough relative to the price of aluminum  
13 to return its Hannibal Facilities to full operation. This stipulation by its own terms was  
14 scheduled to expire on December 31, 2008.

15 **Q. DID ORMET AND AEP OHIO ENTER INTO A SUBSEQUENT AGREEMENT**  
16 **FOR ELECTRIC POWER?**

17 A. Yes. At the conclusion of the stipulation term on December 31, 2008, Ormet and AEP  
18 Ohio entered into an Interim Agreement approved by the Commission on January 7, 2009  
19 in Case Nos. 08-1338-EL-AAM and 08-1339-EL-UNC. This Interim Agreement provides  
20 for service from AEP Ohio to Ormet until the effective date of new AEP Ohio approved  
21 tariffs based on a Commission ruling on AEP Ohio's electric security plan ("ESP")  
22 application (*i.e.* if the Commission adopts the ESP as proposed or if the Companies accept  
23 any modifications made to the ESP by the Commission) and the effective date of a new  
24 special arrangement between AEP Ohio and Ormet subsequently approved by the

1 Commission. On March 18, 2009, the Commission issued an Opinion and Order  
2 modifying and approving an ESP for AEP Ohio, which will be in effect through December  
3 31, 2011. On March 30, 2009, the Commission approved AEP Ohio revised tariffs with  
4 new rates and charges for electric service filed by AEP Ohio in connection with the ESP.

5 **Q. IN 2008, DID ORMET AND AEP OHIO ENTER INTO NEGOTIATIONS FOR A**  
6 **NEW UNIQUE ARRANGEMENT?**

7 A. Yes.

8 **Q. WHAT WAS THE OUTCOME OF THOSE NEGOTIATIONS?**

9 A. Late last year and early this year, Ormet negotiated a power agreement with AEP Ohio that  
10 is the basis of the Unique Arrangement originally proposed in this proceeding. Under the  
11 Unique Arrangement, for 2009, and based on the sale forward of its 2009 metal production,  
12 Ormet would pay an all-in rate of the lesser of \$38.00/MWh or the AEP Ohio Tariff Rate.  
13 The proposed Unique Arrangement is designed to help Ormet bridge the potentially  
14 turbulent economic situation over the next few years so that it can stay in business in Ohio  
15 in the long term. Ormet has been struggling to balance its power costs since emerging from  
16 bankruptcy in 2005. And because global aluminum prices have dropped approximately 56  
17 percent since July 2008, and 26 percent since January 1, 2009<sup>1</sup> due to declining global  
18 demand, and may decline further, Ormet's ability to control the price at which it can sell its  
19 output is extremely limited. Therefore, in order to keep its Hannibal Facilities operating  
20 and ensure its economic survival, Ormet must be able to control its costs of production.

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<sup>1</sup> "Alcoa Swings to Loss As Prices Tumble," Wall Street Journal (April 8, 2009) at B1.

1 **Q. HOW DOES THE 2009 PRICE OF \$38.00/MWH COMPARE WITH OTHER**  
2 **SMELTERS IN THE WORLD?**

3 A. The forecasted 2009 global average power tariff is \$30.7/MWh. The forecasted 2009  
4 power rates in the most competitive regions of the world are much lower with Africa at  
5 \$15.4/MWh and Russia at \$18.1/MWh as examples.

6 **Q. WHAT RATE WOULD ORMET PAY IN SUBSEQUENT YEARS?**

7 A. Schedules for calendar years 2010 and 2011 are attached to the Power Agreement as  
8 Schedules A and B. Beginning in 2011 for the years 2012 through 2018, Ormet's rate will  
9 be determined by schedules filed no later than October 1 of each year prior to the effective  
10 rate for the following year, setting forth an Indexed Rate and a Target Price. The "Indexed  
11 Rate" would be the rate schedule in \$/MWh that Ormet could pay to produce the minimum  
12 cash flow necessary to sustain operations and pay its required legacy pension costs  
13 depending upon the LME price of aluminum. The "Target Price" would be the annual  
14 LME price at which Ormet would be able to pay the AEP Ohio Tariff Rate and still  
15 maintain the minimum cash flow necessary to maintain its operations and pay its required  
16 legacy pension costs.

17 **Q. IS AN LME INDEXED RATE COMMON IN THE SMELTING BUSINESS?**

18 A. Some of the most competitive smelters have LME indexed rates totaling 16 percent, or  
19 some 6.2 million metric tons, of total world aluminum production in 2008.<sup>2</sup>

20 **Q. WHY DOES ORMET NOT INTEND TO SUBMIT AN INDEXED RATE**  
21 **SCHEDULE FOR 2009?**

22 A. Because Ormet has sold forward its 2009 metal production at a fixed price as part of a two  
23 year tolling agreement with Glencore, Ltd.(in order to secure its revenue for calendar year

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<sup>2</sup> Aluminium Smelter Power Tariffs, 2000-2011, February 2009, CRU International Ltd.

2009). Therefore, the revenues Ormet anticipates receiving under its contract for most of its 2009 metal production are not affected by changes in the LME price of aluminum. However, a portion of this arrangement is in jeopardy because of a potential raw material Force Majeure declared by Glencore.

**Q. IS THERE A PREDETERMINED FLOOR FOR THE FUTURE INDEXED RATE THAT ORMET WILL PAY AEP OHIO FOR ELECTRICITY?**

A. No. The proposed Unique Arrangement has been designed to allow Ormet to continue to operate through LME price cycles, which can be --and have recently been-- very volatile. Rather than establishing a hard floor which could threaten its economic survival with even a brief downturn in the LME price cycle, the Unique Arrangement provides for Commission review of all Schedules submitted by Ormet to determine whether they are in the public interest.

**Q. WILL ORMET ALWAYS PAY THE INDEXED RATE IN SUBSEQUENT YEARS?**

A. Not necessarily. When aluminum prices are low, or when the LME price of aluminum is less than or equal to the Target Price, Ormet will pay the Indexed Rate. However, when aluminum prices are high, Ormet will pay a premium for electricity. When the LME price of aluminum is greater than the Target Price, but not more than \$300/Tonne above the Target Price, Ormet will pay 102 percent of the AEP Ohio Tariff Rate. When the LME price of aluminum is greater than the sum of \$300/Tonne plus the Target Price, Ormet will pay 105 percent of the AEP Ohio Tariff Rate. At the end of each calendar year, there will be an annual true-up.

**Q. DOES THE UNIQUE ARRANGEMENT PROVIDE FOR ANY INDEPENDENT THIRD PARTY REVIEW OF THE ANNUAL SCHEDULE?**



1 A. Yes, it does. The Unique Arrangement provides at Section 5.02 that the Commission may  
2 require an independent third-party review of the schedule, at Ormet's expense.

3 **Q. DOES AEP OHIO SUPPORT THE UNIQUE ARRANGEMENT?**

4 A. Yes. AEP Ohio does support the Unique Arrangement, subject to the condition that AEP  
5 Ohio is granted permission by the Commission to recover from other customers through a  
6 rider all revenues lost by entering into this Unique Arrangement.

7 **Q. DOES ORMET SUPPORT AEP OHIO'S RECOVERY OF LOST REVENUES?**

8 A. Yes. Ormet supports AEP Ohio's request to recover lost revenues because AEP Ohio must  
9 remain financially strong to ensure it continues to have the ability to satisfy Ormet's load  
10 requirements.

11 **Q. WHAT WOULD HAPPEN TO ORMET'S OPERATIONS IF A UNIQUE**  
12 **ARRANGEMENT WITH AEP OHIO IS NOT APPROVED?**

13 A. If the Unique Arrangement is not approved, Ormet's very economic survival would be  
14 threatened. If Ormet is unable to secure a long term, competitive electric power contract  
15 that appropriately ties its electric rate to the price of aluminum, Ormet may not have  
16 sufficient cash to continue running its day-to-day operations and to pursue a refinancing of  
17 the company, and it may be forced to shut down the Hannibal Facilities due to high power  
18 costs.

19 **Q. WHAT IS THE POSITION OF THE WORKFORCE AT THE HANNIBAL**  
20 **FACILITY ON THE ISSUE OF A LONG-TERM POWER CONTRACT?**

21 A. The workforce at the Hannibal facility is represented by the United Steelworkers of  
22 America ("USWA") and is in full support of the proposed contract. Ormet and USWA  
23 have worked closely together on issues critical to the economic survival of the Hannibal  
24 facility operations, such as this power contract. A petition signed by over 1000 Ormet

1 employees and retirees supporting a long-term power contract at a predictable and  
2 competitive price has been filed in support of Ormet's application (Attachment D to the  
3 Ormet Application).

4 **Q. DID ORMET RECENTLY FILE AN AMENDED APPLICATION FOR A UNIQUE**  
5 **ARRANGEMENT?**

6 A. Yes, on April 10, 2009, Ormet filed an Amended Application for approval of a Unique  
7 Arrangement.

8 **Q. WHY DID ORMET FILE AN AMENDED APPLICATION?**

9 A. Ormet filed an Amended Application because, due to changing market forces, subsequent  
10 to the filing of its initial Application, it has recently become apparent that there is a very  
11 real possibility that Ormet will need to curtail the equivalent of at least two of its six  
12 potlines in the April-May timeframe. In the event Ormet is able to keep at least four  
13 potlines in operation, Ormet will commit to retain at least 900 jobs at the Hannibal  
14 Facilities through 2009 with fewer than six potlines in operation, provided that Ormet can  
15 reduce the rate it pays for power during this curtailment from the \$38/MWh initially  
16 proposed in the Application to \$34/MWh. Taking this step will allow Ormet to keep as  
17 many personnel employed at the Hannibal Facilities as possible during the potential  
18 curtailment of two of its potlines, enabling Ormet to ramp additional potlines back up to  
19 full operation as soon as market conditions permit. However, if operations fall materially  
20 below the four potline level, additional personnel reductions may be required and if Ormet  
21 does make further personnel reductions below the 900 level, it would resume the \$38/MWh  
22 rate for the remaining operations.

1    **Q.    WHAT IS AEP OHIO'S POSITION ON THE AMENDED APPLICATION?**

2    A.    Ormet informed AEP Ohio of its planned Amended Application prior to filing the  
3           Amended Application on April 10. As of the date of this testimony, Ormet has not yet  
4           been advised of AEP Ohio's position on the Amended Application.

5    **Q.    PLEASE DESCRIBE THE ECONOMIC IMPACT OF THE HANNIBAL**  
6           **FACILITY?**

7    A.    When Ormet's aluminum reduction facility is fully operating, Ormet Primary (1) has  
8           approximately 1,000 employees with wages totally approximately \$56,000,000 per year;  
9           (2) covers health care costs for approximately 7,000 of its workers, retirees and their family  
10          members at a cost of over \$16,000,000 per year; (3) pays approximately \$300,000 annually  
11          in taxes to Monroe County and its School District; and (4) purchases approximately  
12          \$15,000,000 to \$20,000,000 per year in goods and services in the Ohio Valley. The  
13          economic impact of the Hannibal Facility and its operations is discussed in greater detail by  
14          Paul A. Coomes, Ph.D., who prepared an August 15, 2008 research report which is  
15          Attachment E to Ormet's Application.

16   **Q.    DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

17   A.    Yes, it does.

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

<b>In the Matter of the Application of</b>	)	
<b>Ormet Primary Aluminum</b>	)	
<b>Corporation for Approval of a</b>	)	
<b>Unique Arrangement with Ohio</b>	)	<b>Docket No. 09-119-EL-AEC</b>
<b>Power Company and Columbus</b>	)	
<b>Southern Power Company</b>	)	

**TESTIMONY OF PAUL COOMES  
ON BEHALF OF ORMET PRIMARY ALUMINUM CORPORATION**

**April 23, 2009**

1    **Q.    PLEASE STATE YOUR NAME, ADDRESS, AND PROFESSION.**

2    A.    My name is Paul A. Coomes. My address is 3604 Trail Ridge Road, Louisville  
3           KY 40241. I am a consulting economist. I have a Ph.D. in economics from the  
4           University of Texas. I have been a faculty member of the University of Louisville  
5           since 1985.

6    **Q.    HAVE YOU TESTIFIED BEFORE THE PUBLIC UTILITY**  
7           **COMMISSION OF OHIO BEFORE?**

8    A.    No, but I have testified several times before the Kentucky Public Service  
9           Commission.

10   **Q.    PLEASE IDENTIFY ANY EXHIBITS AND ASSOCIATED MATERIALS**  
11          **YOU ARE SPONSORING IN ADDITION TO YOUR TESTIMONY?**

12   A.    I am sponsoring Exhibits ORM-3, ORM-4 and ORM-5 in addition to my  
13          testimony today. Exhibit ORM-3 is my Biographical Information, Exhibit ORM-  
14          4 is my Vita and Exhibit ORM-5 is a research report I performed on behalf of  
15          Ormet Corporation entitled "The Estimated Economic and Fiscal Impacts of the  
16          Ormet Aluminum Smelter Operation in Hannibal, Ohio."

1    **Q.    WERE THESE EXHIBITS PREPARED BY YOU, OR UNDER YOUR**  
2           **DIRECTION?**

3    A.    Yes.

4    **Q.    WHY ARE YOU HERE TODAY?**

5    A.    I have been retained by Ormet to analyze the likely economic and fiscal impacts  
6           in the region if the Hannibal smelter were to close. I have prepared the report  
7           attached as Exhibit ORM-5 and will give a summary of my findings today, as  
8           well as answer any questions you have.

9    **Q.    WHAT ARE YOUR MAIN FINDINGS?**

10   A.    My primary objective was to measure the economic importance of the smelter  
11           operations to the regional economy. My approach was to simulate what would  
12           like happen to jobs, payroll, and tax revenues were the plant to close. Ormet  
13           employs around 1,000 people and pays wages and salaries annually of over \$56  
14           million. Employees live in eighteen counties in three states, of which sixty percent  
15           reside in Ohio. Activity at Hannibal has ebbed and flowed over the past decade,  
16           reflecting changing conditions in the international market for aluminum. Were the  
17           plant to close, I estimate that the total net annual impact in the region would be a  
18           loss of 3,441 jobs and \$195 million in total employee compensation. State and  
19           local governments in Ohio would lose about \$7 million annually in tax revenues.

20   **Q.    HOW IMPORTANT IS THE ALUMINUM INDUSTRY TO THAT**  
21           **REGION?**

22   A.    The Ormet smelter is among the largest private sector employers in the regional  
23           economy, and clearly the largest industrial employer in Monroe County. A State

1 of Ohio statistical profile shows that \$62.9 million of the County's \$107.1 million  
2 in total wages are attributed to the manufacturing industry, of which Ormet is  
3 essentially the only firm. With the average pay close to \$55,000, no other place of  
4 work in the County comes close to this employment opportunity. Moreover,  
5 employee benefits are very lucrative.

6 **Q. BRIEFLY, WHAT METHODS DID YOU USE TO ANALYZE THE**  
7 **IMPORTANCE OF THE ALUMINUM SMELTERS TO THE REGIONAL**  
8 **ECONOMY?**

9 A. Because aluminum operations serve primarily national and international markets,  
10 they bring new dollars into the regional economy. I use standard regional  
11 economic impact methods to evaluate the total economic and fiscal impacts of the  
12 loss of the two plants. Region-specific economic multipliers were obtained from  
13 IMPLAN, a prominent input-output modeling system, for the primary aluminum  
14 production industry. This industry is defined according to the North American  
15 Industrial Classification System (NAICS), using code 331312.

16  
17 The IMPLAN model provides estimates of indirect (inter-industry purchases) and  
18 induced (household spending) effects on sales, jobs, and payrolls for export-based  
19 expansions or contractions of any of 500 local industries. For example, the job  
20 multiplier for the primary aluminum production industry in the Hannibal region  
21 economic area is 3.351, meaning that for every job at the aluminum smelter,  
22 another 2.351 jobs are created elsewhere in the regional economy. Similarly, the  
23 employee compensation multiplier for the industry there is 1.806, meaning that  
24 for every dollar of payroll created at the aluminum smelter another \$0.806 in

1        payrolls are created in other sectors around the region. These economic  
2        multipliers were used to estimate the likely total impact of a shut-down on jobs  
3        and payrolls in the region. By comparing the growth in tax receipts to the growth  
4        in payrolls historically, I calculate 'effective' tax rates and use those to estimate  
5        the amount of income and sales taxes linked to the aluminum industry payrolls.

6        **Q.       DOES THAT CONCLUDE YOUR TESTIMONY TODAY?**

7        **A.       Yes, thank you.**

## Biographical Information

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*Paul A. Coomes, Ph.D.*  
*Professor of Economics, College of Business*  
*University of Louisville, Louisville KY 40292*  
*(O) 502.852.4841 (F) 502.852.7672*  
*paul.coomes@louisville.edu*

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Paul A. Coomes is Professor of Economics in the College of Business, University of Louisville. He is a graduate of Brescia College (BA), Indiana University (MS), and the University of Texas (Ph.D.). Professor Coomes came to the University of Louisville from Texas in 1985. He teaches courses in urban economics, forecasting, microeconomics and macroeconomics. He conducts research for both academic and commercial outlets. Most of his research concerns regional and urban economics, economic development, and measurement problems.

His scholarly research has appeared in many journals, including *Journal of Urban Economics*, *Journal of Regional Science*, *Environment and Planning A*, *Urban Studies*, *Economic Development Quarterly*, and the *Journal of Economic and Social Measurement*.

He has had university-based contract research arrangements with most of the large organizations in the region, including UPS, General Electric, Amazon, Churchill Downs, E.ON, Louisville Water Company, Brown-Forman, Kentucky Fair Board, Kentucky Hospital Association, Jewish Hospital, and several state government cabinets. Coomes is past president of the Kentucky Economic Association, and past chair of the Economics department at Louisville.



Professor Coomes has completed several major projects that impact local economic development policy, including the macro performance measuring system that became the analytical basis behind the Boyle Report and the organization of Greater Louisville, Inc, Louisville's Chamber of Commerce.

Thanks to a series of grants from National City, he and his associate Barry Kornstein have developed a wide range of research tools and reports in support of economic development in the region. They have also created a web page containing presentations, research reports, and maps. The url is: <http://monitor.louisville.edu>

Paul lives with his wife in eastern Jefferson County. He is descended from William and Jane Coomes, who arrived in 1774 at Fort Harrod, Kentucky - where Jane became the first school teacher in the state. His hobbies include hiking, camping, cycling, and carpentry. His favorite quote is by Nobel Laureate Ronald Coase: "If you torture the data long enough, Nature confesses".



VITA

**Paul Anthony Coomes**

HOME: 3604 Trail Ridge Road Louisville, KY 40241 502.394.9017

OFFICE: Department of Economics, College of Business

University of Louisville Louisville, KY 40292 502.852-4841 paul.coomes@louisville.edu

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**Academic training**

Ph.D. in Economics, 1985, University of Texas, Austin TX; Fields: Control Theory, Mathematical Programming, Econometrics; Dissertation: "Optimal Stochastic Control and U.S. Agricultural Policy"

M.S. in Economics, 1975, Indiana University, Bloomington IN

B.S. in Economics, 1973, Brescia College, Owensboro KY

**Professional experience**

Professor of Economics, and National City Research Fellow, College of Business, University of Louisville, July 1999 forward.

Executive Director, School of Economics and Public Affairs, College of Business and Public Administration, University of Louisville, August 1996 to June 1999.

Associate Professor of Economics and National City Research Fellow, College of Business and Public Administration, University of Louisville, January 1995 to June 1999.

Associate Professor of Economics, College of Business and Public Administration, University of Louisville, 1991-1999.

Assistant Professor of Economics, School of Business, University of Louisville, 1985-1991.

Teaching Assistant, Economics Department, University of Texas, Spring 1983 and 1985.

Research Associate, Bureau of Business Research, University of Texas, Fall 1981 to Summer 1983.

Assistant Director, Center for Applied Economic Research, University of Kentucky, 1981.

Consulting Economist, May to December 1980.

Manager, Kentucky Economic Information System, Kentucky Council of Economic Advisors, University of Kentucky, Lexington, January 1977 to May 1979.

Instructor, Brescia College, Owensboro KY, 1975-76 academic year.

**Courses taught**

Urban Economics (Ph.D. and undergraduate levels), Intermediate Microeconomic Theory, Economic Analysis and Forecasting (MBA and undergraduate levels), Senior Seminar in Economics, Principles of Economics, Economic Foundations for MBA students.

**Other relevant experience, distinctions**

2007 Faculty Distinguished Service Award, College of Business, University of Louisville

2004 Chairman's Award, KentuckianaWorks.

2003 Community Service Award, Greater Louisville Inc Technology Network.

Member, Board of Director, Bluegrass Institute for Public Policy, 2004 to 2005.

Member, Board of Directors, Thomas D. Clark Foundation, March 1998 to present

Consulting Editor (Economics), *The Louisville Encyclopedia*, 2000.

First Place Winner, Research Publication Category, American Council of Economic Development, 1996

Associate Editor, *Journal of Urban Affairs*, 1995 to 1998

President, Kentucky Economic Association, 1993-94.

Frankenthal Group faculty research award, academic years 1990-91 and 1991-92.

Board of Directors, Kentucky Economics Association, 1988-1991.

1988 Distinguished Faculty Service Award, School of Business, University of Louisville.

Speaker's Bureau, University of Louisville

Co-developer of *MODLER BLUE* software for advanced econometrics work on microcomputers, by contract with Alphametrics Corporation, Philadelphia, 1985-86.

Editor, *Kentucky Economy: Review and Perspective*, a quarterly publication of the Kentucky Council of Economic Advisors, Vol. 2, No. 2 through Vol. 3, No. 1.

Staff member, Indiana Public Interest Research Group (INPIRG), Bloomington IN, 1974-75.

### Professional organization membership

American Economic Association

North American Regional Science Association

Kentucky Economics Association

### Academic journal articles

with William Hoyt, 2008, "Income Taxes and the Destination of Movers to Multi-state MSAs", *Journal of Urban Economics*, 63:920-937.

with Nan-Ting Chou, 2005, "Cyclical Patterns and Structural Changes in the Louisville Area Economy Since 1990", Federal Reserve Bank of St. Louis *Regional Economic Development*, Volume 1, Number 1, pages 17-29.

with David Simpson, Thomas Rockaway, Terry Weigel, and Carol Holloman, 2005, "Framing a New Approach to Critical Infrastructure Modelling and Extreme Events", *International Journal of Critical Infrastructures*, Volume 1, Number 2/3, pages 125-143.

with Darren Clark and Alexei Izyumov, 2005, "The Location of Employment-based Immigrants Among US Metropolitan Areas", *Journal of Regional Science*, Volume 45, Number 1, pages 113-145 (February).

with Alexei Izyumov, Nan-Ting Chou, and Babu Nahata, "Immigrant Concentration and Educational Attainment: Evidence from US Data", 2002, *Journal of International Migration and Integration*, Volume 3, Number 1, 2002, pages 17-39.

with Alexei Izyumov and Babu Nahata, "Immigration to the Louisville Metropolitan Area: Recent Trends, Policy and Recommendations" *Brandeis Law Review*, Volume 40, Number 3, 2002, pages 1-24.

with Tom Lambert, "An Evaluation of the Effectiveness of Louisville's Enterprise Zone", *Economic Development Quarterly*, May 2001, Volume 15, Number 2, pages 168-180.

"Economic Performance Measures for Metropolitan Areas", *Journal of Economic and Social Measurement*, 1998, Volume 24, pages 157-179.

with John Vahaly, "The Economic Importance of the Military in Kentucky", *Kentucky Journal of Economics and Business*, 1998, Volume 17, pages 99-125.

with Sung-Gun Lee, "Housing Finance in Korea", *Kyung Hee Public Affairs Journal*, 1998, Volume V, Number 1, February, pages 155-176.

with Kevin Stokes, "On the Local Economic Impact of Higher Education in Kentucky", *Kentucky Journal of Economics and Business*, 1996, Volume 15, pages 37-49.

- with William Stober and Richard Thalheimer, "Measuring the Intrastate Distribution of State Government Funds: A Case Study", *Journal of Economic and Social Measurement*, 1994, Volume 20, Number 4, pp. 285-329.
- "A Kalman Filter Formulation for Noisy Regional Job Data", *International Journal of Forecasting*, 1992, Vol.7, pp. 473-481.
- with Dennis Olson, "An Economic Performance Index for U.S. Cities", *Economic Development Quarterly*, 1991, Vol.5 No.4, pp. 335-341 (November).
- with Dennis Olson and John Merchant, "Using a Metropolitan Area Econometric Model to Analyze Economic Development Proposals", *Urban Studies*, 1991, Vol.28, No.3, pp. 369-382.
- with Dennis Olson, "Using BEA and BLS Data to Monitor Metropolitan Area Economic Performance", *Journal of Economic and Social Measurement*, 1990, Vol.16(3), pp. 167-83.
- with Dennis Olson and Dennis Glennon, "The Interindustry Employment Demand Variable: An Extension of the I-SAMIS Technique for Linking Input-Output and Econometric Models", *Environment and Planning A*, 1990, Vol.23, pp. 1063-1068.
- "Forecasting the Present: MSA Employment by Industry", *Kentucky Journal of Economics and Business*, 1989, pp. 1-10.
- "An Illustration of the Application of Control Methods in Choosing Optimal US Agricultural Policy", *Journal of Economic Dynamics and Control*, 1988, Vol. 12, pp. 161-166.
- "PLEM: A Computer Program for Passive Learning, Stochastic Control Experiments", *Journal of Economic Dynamics and Control*, 1987, Vol. 11, pp. 223-227.
- "Solvency and Adequacy of Kentucky's Unemployment Insurance Trust Fund", *Kentucky Journal of Economics and Business*, Volume 7, 1986-87, published for the Kentucky Economic Association, pp. 114-129.
- "The Agriculture Industry in Texas", *Texas Business Review*, November 1983, Bureau of Business Research, University of Texas, Austin, pp. 272-278.

#### **Other articles, book chapters, monographs**

- "Kentucky is Missing Lucrative Office Economy Growth", *Kentucky Annual Report 2005*, University of Kentucky Center for Business and Economic Research, January, pages 21-32.
- with Chris Bollinger, Mark Berger, and Ron Langley, "Estimates of Underemployment in Kentucky Counties", *Kentucky Annual Report 2003*, University of Kentucky Center for Business and Economic Research, January, pages 5-10.
- with William Hoyt and Mark Berger, "Business Taxes in Kentucky: Re-examining the Evidence", Kentucky Long-Term Policy Research Center, *Foresight*, Volume 8, Number 4, 2002, pages 6-8.
- "Improving Earnings per Job: The New Economic Development Challenge in Kentucky", *Kentucky Annual Economic Report 2002*, University of Kentucky Center for Business and Economic Research, January, pages 37-43.
- "Economics", a chapter for *Our Kentucky*, 2<sup>nd</sup> edition, James C. Klotter, editor, The University Press of Kentucky, 2000, pages 172-188.
- "Economy", a 3,800 word entry for *Encyclopedia of Louisville*, John Kleber, editor, The University Press of Kentucky, 2000, pages 262-265.
- "Time to Level the Field", *Kentucky Commerce*, 50<sup>th</sup> anniversary publication of the Kentucky Chamber of Commerce, June 1996, pp. 6-10.
- "Recession: Winners and Losers", *American Demographics*, 1992, Vol.14, pp. 62-64 (October).
- Metro Updates (a full page article in *Louisville Magazine* (thru 1993) and *Business First*)

- "Comparison Cities", Fall 1991
- "A Changing Louisville Economy", Winter 1992
- "The Kentucky Derby", Spring 1992
- "The 1990-91 Recession from the Bottom Up", Summer 1992
- "More Results from the 1990 Census", Fall 1992
- "The Service Sector: A Primer", Winter 1993
- "No News is Good News for the Louisville Economy", Spring 1993
- "Economies of Large Cities in Region Performed Well Since 1980-82 Recession", Winter 1994.
- "Kentucky's Exports Diversified in the Last 20 Years", Spring 1994.
- "130,000 New Jobs Between 1995 and 2020 Projected", Summer 1994
- "Small Metro Areas in West, South, Fastest Growing in the 90's", with Barry Kornstein, Fall 1994
- "Russia's Awakening Cities", with Alexei Izyumov, Winter 1995
- "The Nineties Have Been Good in Louisville", Spring 1995
- "The News is Bad, the Facts are Good", Summer 1995
- "Louisville's Recent Growth", Winter 1996
- "Manufacturing in the Louisville Area", Spring 1996
- "Agribusiness in the Louisville Area", Summer 1996
- "The Impact of the Health Services Industry and the Louisville Medical Center on Louisville Area's Economy", with Barry Kornstein, Winter 1997.
- "Louisville's Economy in the 1990's", Spring 1997
- "The Louisville Metropolitan Statistical Area", with Barry Kornstein, Summer 1997
- "The Earnings of Workers in Louisville", with Barry Kornstein, Winter 1998
- "The Economic Importance of Military Activity in Kentucky", with Jay Vahaly and Barry Kornstein Summer 1998
- "The State of the State Economy", *The Kentucky Journal*, February 1994
- "Louisville's Recovery Has Been Solid", *The Kentucky Journal*, December 1990.
- a book review of *Feedback: A New Framework for Macroeconomic Policy*, in *SEDC Sightings*, June 1989.
- "Using Your Model to Improve Preliminary Estimates of Regional Income and Employment", *Readings in Business and Economics Research*, Association for University Business and Economics Research, February 1988, pp. 10-16.
- "The Kentucky Economic Situation", in *Kentucky Council of Economic Advisors Annual Report 1981*, University of Kentucky, Lexington, KY, pp. 17-31.
- with Charles G. Renfro, "Kentucky Econometric Model Forecast: Impact Analysis", in *Kentucky Economy: Review and Perspective*, Kentucky Council of Economic Advisors, University of Kentucky, Lexington, March 1981.
- "Kentucky Economic Outlook", a short article appearing in each quarterly issue of *Kentucky Economy: Review and Perspective*, from February 1977 to March 1979.
- with Charles G. Renfro, "The Kentucky Economic Situation", in *Kentucky Council of Economic Advisors Annual Report 1979*, Lexington, KY, 1980, pp. 21-41.

with Charles G. Renfro, "The Kentucky Economic Information System", in C.A. Chapman, C.L. Infanger, L.W. Robbins and D.L. Debertin (eds), *Taking Computers to the Community*, Lexington KY, 1978, pp 201-208.

### Conference Presentations

With Glenn Blomquist, Chris Jepsen, Brandon Koford, and Ken Troske, "Estimating the Social Value of Higher Education: Willingness to Pay of Community and Technical Colleges", North American Regional Science Association meetings, New York, November, 2008.

with William Hoyt, "A Model of Metropolitan Housing", North American Regional Science Association meetings, Savannah, November, 2007.

with William Hoyt, "A Model of Metropolitan Building Permits", Federal Reserve of St. Louis BERG Conference, St. Louis, May 2007.

with William Hoyt, "The Quantity and Price of New Housing Units in Metropolitan Areas", North American Regional Science Association meetings, Toronto, November, 2006.

with William Hoyt, "State Income Taxes and the Destination of Movers", Allied Social Science Association meetings, Boston, January 2006.

with Barry Kornstein, "Metropolitan Clusters: Stability of Membership over Time", North American Regional Science Association, Seattle, November 2004.

"Economic Conditions in Markets Around Kentucky", Federal Reserve Bank of St. Louis, meetings in Memphis, September 2004.

with Barry Kornstein, "Metropolitan Clusters: How Many Market Types are There", North American Regional Science Association, Philadelphia, November 2003.

with Darren Scott and Alexei Izyumov, "The Initial Location Choice of Legal Immigrants Among US Metro Areas", Southern Regional Science Association meetings, Louisville, March 2003.

with Chris Bollinger, "Initial Estimates of Underemployment in Kentucky Counties", Kentucky Economic Association, Lexington, October 2002.

with Alexei Izyumov and Darren Scott, "Why Did Vladimir Choose Omaha? The Initial Location Choice of Legal Immigrants", North American Regional Science Association meetings, San Juan, Puerto Rico, November 2002.

"The Enclave Effect on Education of Immigrants", with Alexei Izyumov, Babu Nahata, and Nan-Ting Chou, North American Regional Science Association meetings, Charleston SC, November 2001.

"The Recent Economic Performance of Regions in Kentucky", Kentucky Economic Association meetings, Lexington, October 2001.

"Measurement Systems for Regional Economic Development", at Federal Reserve Bank of Dallas conference *Can Cities Control Their Destiny?*, San Antonio, TX, August 1999.

"An Economic Indicator System for Metropolitan Areas", Regional Economic Indicators Workshop, Braga, Portugal, June 1998

"Comprehensive Measures of Metropolitan Area Performance: Accounting for Economic Development", Southern Regional Science Association annual meetings, Baltimore, MD, April 1996.

"Long Range Economic and Demographic Forecasting in Support of Local Land Use Planning", North American Regional Science Association meetings, Cincinnati, OH, November 1995.

- "Long Range Economic and Demographic Forecasting in Support of Local Land Use Planning", Kentucky Economic Association annual meeting, Lexington, KY, October 1995.
- "Greater Louisville Forecasts of Jobs, People and Income: 1995 to 2020", Kentucky Economic Association annual meeting, Lexington, KY, October 1994.
- "The Recreation Quotient: Measuring the Import Substitution Effect of Local Events", with Dennis Olson, Western Economic Association Meeting, Lake Tahoe, Nevada, June 1993.
- "Measuring the Impact of the Kentucky Derby", Kentucky Economics Association annual meeting, Lexington KY, October 25, 1991.
- "Using Linked Input-Output/Econometric Models to Analyze Economic Development Proposals", Association of University Business and Economic Research, 1991 Fall Conference, St. Petersburg, FL, October 9, 1991.
- "Using a Metropolitan Area Econometric Model to Analyze Economic Development Proposals", Kentucky Economic Association meeting, Lexington KY, September 14, 1990.
- "Research Tools for Economic Development", presentation to State Governments/Higher Education Partnership Conference, Louisville KY, December 5, 1989
- "Tools for Evaluating the Benefits of Economic Development Proposals", presentation to Leadership Kentucky conference, Erlanger KY, October 13, 1989.
- "Regional Information Sources, Applications and Techniques of Analysis", invited presentation at MODLER/DATAVIEW Users' Conference and Training Session, Philadelphia PA, October 10-11, 1989
- "An Earnings-Weighted Job Index for Cities", Kentucky Economic Association meeting, Louisville KY, September 29, 1989
- "Input-Output Studies and Econometric Models", American Chambers of Commerce Research Association, San Diego, CA, June 1989.
- "The Recovery of Louisville and Other Midwestern Cities", The Economic Roundtable, Louisville KY, February 28, 1989
- "Forecasting Regional Employment by Industry: Kalman Filters", 35th North American Meetings of the Regional Science Association, Toronto CANADA, November 13, 1988.
- "Forecasting the Present: Regional Employment by Industry", presented at annual meeting of Kentucky Economic Association, Lexington, KY, September 23, 1988.
- "Filtering Provisional Regional Employment Estimates by Industry", presented at 5th Annual Regional Modelling Conference, Louisville, KY, May 3, 1988
- "Filtering Provisional Regional Employment Estimates by Industry", presented at Midwest Decision Sciences Institute meetings, Louisville, KY, May 7, 1988
- "Using Your Model to Improve Preliminary Estimates of Regional Income and Employment", presented at 41st Annual Conference of Association of University Business and Economic Research, San Francisco, CA, November 3, 1987.
- "Organizing Your Data for Economic Analysis" invited presentation at MODLER/DATAVIEW Users' Conference and Training Session, Philadelphia, PA, October 20-21, 1987.
- "An Illustration of the Application of Stochastic Control Methods in Choosing Optimal U.S. Agricultural Policy", presented at Ninth Annual Conference of Society of Economic Dynamics and Control, Boston, June, 1987.
- "Forecasting the Present in Regional Economies," (revised), presented at Seventh International Symposium on Forecasting, Boston, May 1987

"Forecasting the Present in Regional Economies," presented at Fourth Annual Economic Regional Modeling Conference, University of Louisville, May 1987.

"PLEM: A Computer Program for Passive Learning Stochastic Control Experiments," presented at Fifth IFAC/IFORS Conference on Dynamic Modeling of National Economies, June 1986, Budapest, HUNGARY.

"An Optimal Control Approach to Managing Unemployment Insurance Trust Funds," Third Annual Regional Economic Modeling Conference, University of Louisville, May 1986.

### **Reviewing and Refereeing**

articles for:

*Environment and Planning A*

*European Journal of Operational Research*

*Growth and Change*

*Kentucky Journal of Business and Economics*

*Regional Science Perspectives*

*International Journal of Forecasting*

*Journal of Forecasting*

*Journal of Economic and Social Measurement*

*Journal of Development Economics*

*Journal of Urban Affairs*

*Urban Studies*

books for:

Dryden Publishing Company

Grawemeyer World Order Award

Harcourt, Brace, Jovanovich, Publishers

McGraw-Hill

Society of Economic Dynamics and Control Sightings

West Publishing Company

Wadsworth Publishing Company

### **Contract Research Reports** (most available at <http://monitor.louisville.edu>)

with Paminder Jassal, Barry Kornstein, and Greg Virgin, "The Economic Importance of Military Activity in Kentucky: 2008 Update", December 2008, 28 pages.

with Barry Kornstein, "The Economic Impact of Events in 2005 at the Kentucky Fair and Exposition Center and the Kentucky International Convention Center", for the Kentucky State Fair Board, January 2006, 19 pages,

with Margaret Maginnis, "Louisville's Health-Related Economy 2006", for the Greater Louisville Health Enterprises Network, May 2006, 77 pages.

with Barry Kornstein, "Kentucky's Economic Competitiveness: A Call for Modernization of the State's Fiscal Policies", November 2004, 73 pages.

"The Economic Importance of Owensboro's Riverport", for Owensboro Riverport Authority, October 2004, 12 pages.

- with Barry Kornstein and Raj Narang, "The Economic Importance of Military Activity in Kentucky: 2004 Update", with Raj Narang and Barry Kornstein, January 2004, 32 pages.
- "Capacity and Performance of Philanthropy, Charitable Giving, and the Public Sector in Owensboro-Daviess County Kentucky", for the Hager Educational Foundation, January 2004, 30 pages.
- with Michael Price, "The Louisville Labor Force: Report on the State of the Regional Workforce 2003", for KentuckianaWorks, 30 pages, April 2003.
- with Ted Strickland, "The Size, Characteristics, and Performance of Technology-intensive Industries in the Louisville Area Economy", for Greater Louisville Inc Technology Network, October 2003, 56 pages.
- with Mark Berger et al, "Kentucky Labor Supply and Demand Surveys", for Kentucky Cabinet for Workforce Development, November 2002, University of Kentucky and University of Louisville, 84 pages.
- with Barry Kornstein, "The Economic Impact of Events in 2001 at the Kentucky Fair and Exposition Center and the Kentucky International Convention Center", for the Kentucky State Fair Board, January 2002, 19 pages,
- with Alexei Izyumov and Babu Nahata, "Immigration to the Louisville Metropolitan Area: Trends and Characteristics", for C.S.&E. Foundation, June 2001, 52 pages.
- with Raj Narang, "Louisville's Health-Related Economy: Size, Character and Growth", for Greater Louisville Inc, May 2001, 25 pages.
- with Michael Price, "The Recent Economic Performance of Regions in Kentucky", for Kentucky Economic Development Cabinet, May 2001, 67 pages,.
- with Barry Kornstein, "Macro Performance Indicators for the Louisville Area Economy", March 2001, sponsored by National City, 65 pages.
- with William Hoyt and Mark Berger, "Statutory and Economic Incidence of Taxes in Kentucky and Surrounding States" for the Kentucky Chamber of Commerce, January 2001, 25 pages.
- with Barry Kornstein, "An Economic Analysis of the Gainsborough to Rembrandt Art Show", Speed Art Museum, December 2000, 16 pages.
- with Raj Narang, "The Economic Importance of Arts and Cultural Attractions in the Louisville Area", Greater Louisville, Inc., November 1999, 22 pages.
- with Michael Price, "The Louisville Labor Force: Trends and Issues", Workforce Investment Board, October 1999, 20 pages.
- with Barry Kornstein, "The Intrastate Distribution of Kentucky State Government Revenues and Expenditures", Fiscal Year 1996-97", August 1999, 16 pages.
- with Alexei Izymov and Babu Nahata, "Attracting Immigrants to Urban Areas", C.S.&E. Foundation, August 1999, 50 pages.
- with Barry Kornstein, "The Economic Impact of the Breeders' Cup Race", Churchill Downs, July 1999, 18 pages.
- with John Vahaly, "The Economic Impact of Military Activities in Kentucky", Kentucky Commission on Military Affairs, Fall 1997 (and December 2000 update), 32 pages.
- with Barry Kornstein, "The Economic Impact of 1997 Events at the Kentucky Fair and Exposition Center and Commonwealth Convention Center", for the Kentucky State Fair Board, 1997, 22 pages.
- with Nan-Ting Chou, "Long-Term Economic and Demographic Forecasts for the Louisville Market, including Forecasts of Electricity and Water Sales by Customer Type", for the Louisville Gas and



Electric Company and the Louisville Water Company, five year contract beginning 1997, 23-page reports annually.

"The Economic Impact of Louisville's Downtown Medical Center", for Jewish Hospital, October 1996, 23 pages.

with Barry Kornstein, "1995 Macro Performance Indicators", sponsored by National City, March 1996, 75 pages.

"Agribusiness in the Louisville Area Economy", for Louisville Area Chamber of Commerce and Kentucky Department of Agriculture, May 1996, 65 pages.

with Michael Price, "Sub-Area Forecasts of People, Housing and Jobs: 1995 to 2020", for Jefferson County Comprehensive Land Use Plan, Louisville Area Chamber of Commerce and Greater Louisville Economic Development Partnership, August 1995, 68 pages.

with Michael Price and Nan-Ting Chou, "Greater Louisville Forecasts of Jobs, Population and Income: 1995 to 2020", for Jefferson County Comprehensive Land Use Plan, Louisville Area Chamber of Commerce and Greater Louisville Economic Development Partnership, July 1994, 24 pages.

with Stephan Gohmann, "The Impact of the University of Louisville on the Louisville Economy", for President's Office, University of Louisville, September 1994, 20 pages.

"The Economic and Fiscal Impact of the Downtown Medical Center", for Jewish Hospital Corporation, June 1994, 18 pages.

with Bruce Gale, "The Economic Impact of Events at the Kentucky Fair and Exposition Center and the Commonwealth Convention Center", for the Kentucky Fair Board, Summer 1993, 20 pages.

#### **University Research Contracts (Principal Investigator)**

"Economic, Demographic and Water Sales Forecasts for the 23-County Regional Economy", for the CDM Engineering Company /Louisville Water Company, June 2008 to July 2009, \$40,000,

with Barry Kornstein, "Updates to Occupational Outlook, Human Capital Scorecard", for KentuckianaWorks, June 2008 to June 2009, \$40,000.

with Paminder Jassal, Barry Kornstein, and Greg Virgin, "The Economic Importance of Military Activity in Kentucky: 2008 Update", December 2008, \$30,000.

"Economic Impact Modeling System for Hospitals", for Kentucky Hospital Association, May to December, 2007, \$25,000.

with Ken Troske, "The Economic Value of the Kentucky Community and Technical College System", for KCTCS, joint with University of Kentucky, \$260,000, January to December, 2007.

"The Economic Impact of 2007 Events at the Kentucky Horse Park", for Kentucky Horse Park, January 2007 to June 2008, \$35,000.

with Tom Rockaway, "Changes in Water Use Patterns", for the American Water Works Association Research Foundation, November 2006 to August 2008, \$301,000.

with Michael Price, "Updates to Occupational Outlook, Human Capital Scorecard", for KentuckianaWorks, \$60,000, June 2006 to June 2007.

"Update to Strategic Plan", for Kentucky Commission on Military Affairs, \$20,000, June to December 2006.

with William Hoyt (UK) "Property Taxation Practices and Impacts throughout the United States since Proposition 13", for National Center for Real Estate Research, \$37,000, July 2005 to June 2006.

"Louisville's Health Related Economy", for the Greater Louisville Health Enterprises Network, \$35,000, January to June 2006.

- “Economic and Demographic Forecasting Model, with Forecasts, for Regions in Kentucky”, for Louisville Gas and Electric Company, \$20,000, November 2005 to June 2006.
- “The Economic Impact of 2005 Events at the Kentucky Fair and Exposition Center, and the Louisville International Convention Center”, for Kentucky Fair Board, \$36,000, January 2005 to June 2006.
- “Revenue Forecasting Model, with Forecasts”, for Louisville-Jefferson County Metro Government, \$30,000, July 2004 to June 2005.
- “The Economic Importance of Owensboro’s Riverport”, for Owensboro Riverport Authority, October 2004, \$15,000, July to December 2004.
- “Economic and Demographic Forecasting Model, with Forecasts, for Regions in Kentucky”, for Louisville Gas and Electric Company, \$20,000, July 2004 to December 2004.
- with Michael Price, “Occupational Characteristics and Forecasts for 24-County Louisville Economy”, plus other labor-related projects, sponsored by KentuckianaWorks, April 2004 to June 2005, \$70,000.
- “The Intrastate Distribution of Kentucky State Government Revenues and Expenditures, FY 2003”, sponsored by Greater Louisville Inc, Northern Kentucky Chamber of Commerce, TRI-ED economic development group in northern Kentucky, and Lexington Urban County Government, March to December 2004, \$24,000.
- “Capacity and Performance of Philanthropy, Charitable Giving, and the Public Sector in Owensboro-Daviess County Kentucky”, for the Hager Educational Foundation, February to December 2003, \$15,000.
- “The Economic Importance of Military Activity in Kentucky: 2004 Update”, for the Kentucky Commission on Military Affairs, May 2003 to February 2004, \$20,000.
- with Ted Strickland, “The Technology Industry in the Louisville Economy”, for Greater Louisville Inc Technology Network, March to December 2003, \$20,000.
- with Michael Price, “Labor Supply Analysis of the Louisville Market”, KentuckianaWorks, July 2002 forward,, \$25,000.
- with Barry Kornstein, “Comparative Study of Light Rail Systems”, Transit Authority of River City, July 2002, \$20,000.
- “Economic Impact Model for Hospitals in Kentucky”, Kentucky Hospital Association, November 2001, \$18,000.
- with Bruce Gale, “Labor Market Supply and Demand Study”, Kentucky Workforce Cabinet, September 2001, \$155,000.
- “Economic, Demographic and Water Sales Forecasts for the 23-County Regional Economy”, for the Black and Veatch Corporation/Louisville Water Company, July 2001, \$33,000,
- with Nan-Ting Chou and Barry Kornstein “Economic, Demographic and Industrial Electricity Forecasts for the Louisville Area”, for the Louisville Gas and Electric Company, \$10,000.
- “Economic Development Strategies for Kentucky Regions”, Kentucky Economic Development Cabinet, July 2001, \$20,000.
- “Economic Analysis of Kentucky Fair Board Events During 2001”, Kentucky Fair Board, February 2001, \$30,000.
- “Economic Monitoring System for Louisville’s Health-Related Economy”, Greater Louisville Inc, January 2001, \$27,000.
- “Economic Analysis Tools” for Industry Inc. of Owensboro, December 2000, \$10,000.

- with Michael Price, "Economic Performance Measures for Kentucky Regions", Kentucky Economic Development Cabinet, November 2000, \$50,000.
- with Barry Kornstein, "An Economic Analysis of the Gainsborough to Rembrandt Art Show", Speed Art Museum, September 2000, \$15,000.
- "The Economic Importance of Arts and Cultural Attractions in the Louisville Area", Greater Louisville, Inc., November 1999, \$18,000.
- with Michael Price, "Labor Force Analysis of the Louisville Economic Area", Workforce Investment Board, October 1999, \$25,000.
- with Alexei Izymov and Babu Nahata, "Analysis of Immigration Patterns Among US Cities", CS&E Foundation, August 1999, \$56,000.
- "The Economic Impact of the Breeders' Cup Race", Churchill Downs, October 1998, \$18,000.
- "The Fiscal Impact of UPS Operations in Louisville", United Parcel Service, Fall 1998, \$6,000.
- "Strategic Marketing Plan for Military Assets in Kentucky", the Kentucky Commission on Military Affairs, 1998-99, \$200,000.
- with Steve Gohmann, "The Economic Impact of the Hospital Industry in Kentucky", Kentucky Hospital Association, Winter 1997-98, \$25,000.
- with John Vahaly, "The Economic Impact of Military Activities in Kentucky", Kentucky Commission on Military Affairs, Fall 1997, \$25,000.
- "An Economic Impact Model for the Owensboro, Kentucky Regional Economy", Industry Incorporated, Owensboro, Spring 1997, \$5,000.
- "The Economic Impact of 1997 Events at the Kentucky Fair and Exposition Center and Commonwealth Convention Center", for the Kentucky State Fair Board, 1997, \$20,000.
- with Nan-Ting Chou, "Long-Term Economic and Demographic Forecasts for the Louisville Market, including Forecasts of Electricity and Water Sales by Customer Type", for the Louisville Gas and Electric Company and the Louisville Water Company, five year contract beginning 1997, at \$20,000 per year.
- "The Economic Impact of Louisville's Downtown Medical Center", for Jewish Hospital, July 1996, \$6,000.
- "Agribusiness in the Louisville Area Economy", for Louisville Area Chamber of Commerce and Kentucky Department of Agriculture, March 1995 to February 1996, \$25,000.
- with Michael Price, "Database on Municipal Finances", Jefferson County Governance Task Force, Louisville Area Chamber of Commerce, September 1995, \$8,000.
- with Michael Price, "Sub-Area Forecasts of People, Housing and Jobs: 1995 to 2020", for Jefferson County Comprehensive Land Use Plan, Louisville Area Chamber of Commerce and Greater Louisville Economic Development Partnership, September 1994 to August 1995, \$30,000.
- with Michael Price and Nan-Ting Chou, "Greater Louisville Forecasts of Jobs, Population and Income: 1995 to 2020", for Jefferson County Comprehensive Land Use Plan, Louisville Area Chamber of Commerce and Greater Louisville Economic Development Partnership, December 1993 to July 1994, \$65,000.
- with Stephan Gohmann, "The Impact of the University of Louisville on the Louisville Economy", for President's Office, University of Louisville, September 1994, \$6,000.
- "The Economic and Fiscal Impact of the Downtown Medical Center", for Jewish Hospital Corporation, June 1994, \$6,000.

with Bruce Gale, "The Economic Impact of Events at the Kentucky Fair and Exposition Center and the Commonwealth Convention Center", for the Kentucky Fair Board, Summer 1993, \$18,000.

Economic impact study for ARCO Aluminum, June 1993, \$6,000.

Economic consultant to Bank One of Kentucky, 1993 to 1995, \$10,000 per year.

Economic consultant to General Electric Company, Winter 1992-93, \$4,000.

Economic consultant to Louisville Water Company, 1992-95, \$5,000 per year.

Economic consultant to Galloway Appraisal Company, Louisville, August 1992.

Principal Investigator, "A Cost Comparison Between the Archdiocese of Louisville School System and the Jefferson County Public School System" and "Public Tax Savings from the Operation of Catholic Schools in Jefferson County Kentucky, for the Archdiocese of Louisville, November 1993 to February 1994, \$5,000.

Principal Investigator, "The Archdiocese of Louisville Factbook", for the Archdiocese of Louisville, December 1992 to January 1993, \$5,000.

Principal Investigator, "The Intra-State Distribution of Kentucky State Government Revenues and Expenditures", for Louisville Area Chamber of Commerce, funded by Greater Louisville Economic Development Partnership, November 1991 to August 1992, \$20,000.

Principal Investigator, "Economic Development Electronic Information Network", sponsored by a grant from First National Bank, 1990 to 1995, \$25,000 per year.

Principal Investigator, "The Impact of the 1991 Kentucky Derby and 1991 Breeders' Cup", sponsored by the Equine Industry program at the University of Louisville, February 1991 to July 1992, \$30,000.

Co-Principal Investigator with Dennis Olson, "Analysis and Critique of Louisville Gas and Electric Company's 1988 Load Forecast, December 1989, \$3,000.

Principal Investigator and Creator, "Economic Performance Index for Cities" for the Greater Louisville Economic Development Partnership, through the University Bureau of Economic Research, 1987 to 1993, \$20,000 per year.

Principal Investigator, "Economic Impacts of Economic Development Initiatives", retainer with City/County Office for Economic Development to evaluate the economic and fiscal impact of proposed initiatives, 1989 to 1994, \$20,000 per year.

Co-Principal Investigator with Dennis Olson, Dennis Glennon and Julia Lane, Economic Development Modelling System, funded by City of Louisville and Jefferson County through Bureau of Economic Research, University of Louisville, June to December, 1988, \$120,000.

Long Range Economic Forecasts of the Louisville Economy, for Louisville Gas and Electric Company, through Bureau of Economic Research, University of Louisville, annual, 1987 to present, \$6,000 per year.

Co-Principal Investigator with John Bernardo and Charles Hultman, "Impact of Increased User Fees on Kentucky's Waterborne Transportation," for Kentucky Department of Commerce, by Office of Research, College of Business and Economics, University of Kentucky, April 1982, 105 pages, \$15,000.

#### Other Consulting, Service

Economic consultant to E.ON (LGE, KU), 2009.

Economic consultant to Home Builders Association of Louisville, 2008.

Economic consultant to Brown-Forman Corporation, 2007, 2008.

Economic consultant to Nally and Haydon Holdings, Bardstown, 2006-07.

Economic consultant to Amazon, 2006

Member of Transition Team, Governor Ernie Fletcher, November-December 2003, pro bono.

Economic Consultant to Elizabethtown Tourism and Convention Bureau, July 2003.

Economic Consultant to Bullitt family, per their real estate development of farm.

Member, Merger Transition Task Force, City of Louisville and Jefferson County Governments, 2001-2002, pro bono.

Expert witness before Kentucky Public Service Commission, E.ON acquisition of Powergen, August 2001.

Consultant to Indiana 21<sup>st</sup> Century Fund, dispersing \$50 million to commercialize high tech ideas, May 2000.

Economic Consultant to Kentucky Economic Development Corporation, May-July, 1999.

Economic consultant to the City of Los Angeles and the Milken Institute for Job and Capital Creation, 1996-1998.

Economic consultant to Bullitt County (Kentucky) Tourist Commission, January to March, 1997.

Economic consultant to Harrison County (Indiana) Chamber of Commerce.

Economic consultant to Kentucky Utilities Company.

Member of Task Force, Jefferson County Governance Project, 1995, pro bono.

Economic consultant to Bullitt County (Kentucky) Tourist Commission, October-December 1994.

Economic consultant to Carroll County (Kentucky) Economic Development Corporation, July 1994.

Economic consultant to Perry County (Indiana) Economic Development Corporation, June 1993 forward.

Expert testimony, Reynolds Metal Company, April 1993.

Chairman of research committee, Louisville Area Chamber of Commerce, 1992-93, pro bono.

Member of Steering Committee, Regional Economic Development Strategy (REDS), Louisville Area Chamber of Commerce, 1992-94, pro bono.

Member of research committee, Goals for Greater Louisville, 1991-92, pro bono.

Economic consultant to Chi-Chi's restaurant company, 1990-91.

Computer system design and purchasing consultant to Kentucky Indiana Planning and Development Authority (KIPDA), pro bono, February 1989, pro bono.

Member, Delphi Panel on long-range utility forecasts, Louisville Gas and Electric Company, May 1987.

Forecasts for the Retail Automotive Sales and the Coal Industry in central and eastern Kentucky, for First Security National Bank, Lexington, KY, with Charles G. Renfro and Associates, 1980.

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## **The Estimated Economic and Fiscal Impacts of the Ormet Aluminum Smelter Operation in Hannibal, Ohio**

by  
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a research report for  
The Ormet Corporation

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### **EXECUTIVE SUMMARY**

**O**rmet Corporation, headquartered in Hannibal Ohio, is a major producer of primary aluminum in the United States. The operation is on the Ohio River at the southeastern edge of the state, across the border from West Virginia. It currently employs around 1,000 people and pays wages and salaries annually of over \$56 million. Employees live in eighteen counties in three states, of which sixty percent reside in Ohio. Activity at Hannibal has ebbed and flowed over the past decade, reflecting changing conditions in the international market for aluminum.

The Ormet Corporation is interested in learning about and documenting the regional economic importance of its operations, so they can better communicate the ramifications of rising electricity costs should prices reach a threshold such that the smelting operations were financially threatened. The purpose of this report is to document and communicate the regional economic and fiscal importance of this aluminum plant.

I have used regional data and industry-specific multipliers to estimate the economic and fiscal impacts of the operation. These estimates can be used to quantify the likely impact were the plant closed due to low aluminum prices or high electricity prices. I estimate that the total net annual impact in the region is 3,441 jobs and \$195 million in total employee compensation. State and local governments in Ohio would lose about \$7 million annually in tax revenues. These estimates are for the economic and fiscal categories most easily quantified. There are other impacts, though they are harder to measure with any precision. Local real estate and retail markets are linked to the payrolls at the smelter. Social indicators, like unemployment and crime, also are related to the plant's employment levels, as are public costs for unemployment benefits, retraining, and social services.

## BACKGROUND

Aluminum is made from alumina, or aluminum oxide, essentially by passing enormous electric current through steel 'pots' containing a cryolite-alumina mixture. This process is often called reduction, because the electrolysis process separates alumina to its elements, one of which is the aluminum metal. The process is also called smelting. The molten aluminum is siphoned off the pots and formed into crucibles, which when cooled become the familiar ingots traded on the international metals market<sup>1</sup>. Alumina is made from bauxite, most of which is obtained from Australia, Brazil, Guinea, and Jamaica. Ormet has an alumina production facility in Louisiana. Because of the extremely large electricity requirements, most aluminum smelting is done near sources of inexpensive electricity, such as hydroelectric plants. Moreover, since the least cost method of shipping alumina and aluminum is by barge, smelters are often located on major rivers such as the Ohio.

The Ormet smelter is among the largest private sector employers in the regional economy, and clearly the largest industrial employer in Monroe County. The Ohio Department of Development produces statistical profiles for each county<sup>2</sup>. It shows the top employers in Monroe County to be:

Extendicare/Woodsfield Nursing Center  
 Monroe County Government  
 Ormet Corporation  
 Riesbeck Food Markets  
 Safe Auto Insurance Group  
 Slay Transportation Company  
 Switzerland of Ohio Local Board of Education

The nursing home, government, grocery, insurance, and school organizations exist to serve the local market, and hence do not bring in new dollars to the regional economy. Ormet and Slay Transportation are the only two major employers in the County that generate dollars there, through their sales of goods and services to the rest of the world.

Moreover, the same statistical profile shows that \$62.9 million of the County's \$107.1 million in total wages are attributed to the manufacturing industry, of which Ormet is essentially the only firm. With the average pay close to \$55,000, no other place of work in the County comes close to this employment opportunity. Moreover, employee benefits are very lucrative. The company reports that its contributions to the social security and Medicare programs for its employees, plus the value of retirement, health insurance, and other fringe benefits is almost as large as the base wages and salaries.

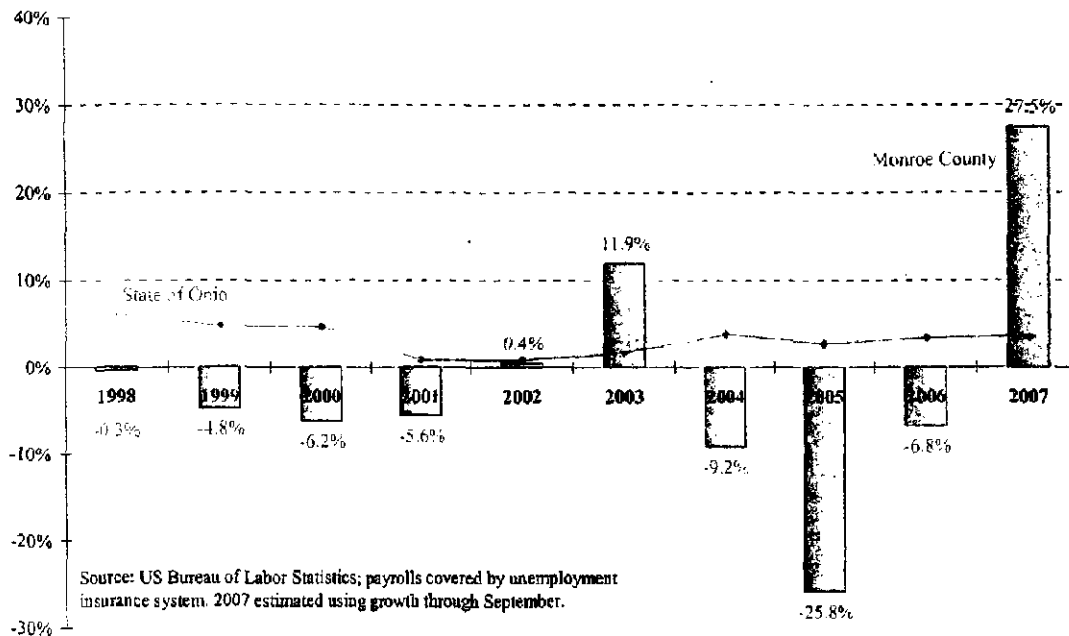
We can also now discern in published economic data the effects of the closure and reopening of the Ormet facility in Hannibal, Ohio. The company emerged from bankruptcy in April 2005, but the Hannibal smelter lines had been operating well below

<sup>1</sup> See <http://mii.org/Minerals/photoal.html> for a simple explanation of the production process.

<sup>2</sup> [www.odod.state.oh.us/research/files/s0.htm](http://www.odod.state.oh.us/research/files/s0.htm)

capacity for two years prior. The facility was essentially idle from 2005 until late 2006, when it was restarted to take advantage of rising aluminum prices. BLS data show that wage and salary payments by all employers in Monroe County were off about 9 percent in 2004, 26 percent in 2005, and 7 percent in 2006. County payrolls bounced back in 2007 after the smelter was brought back into full production. Clearly, the local economy is very sensitive to production activity at Ormet.

**Growth in Total Wages and Salaries Paid  
Monroe County and State of Ohio**



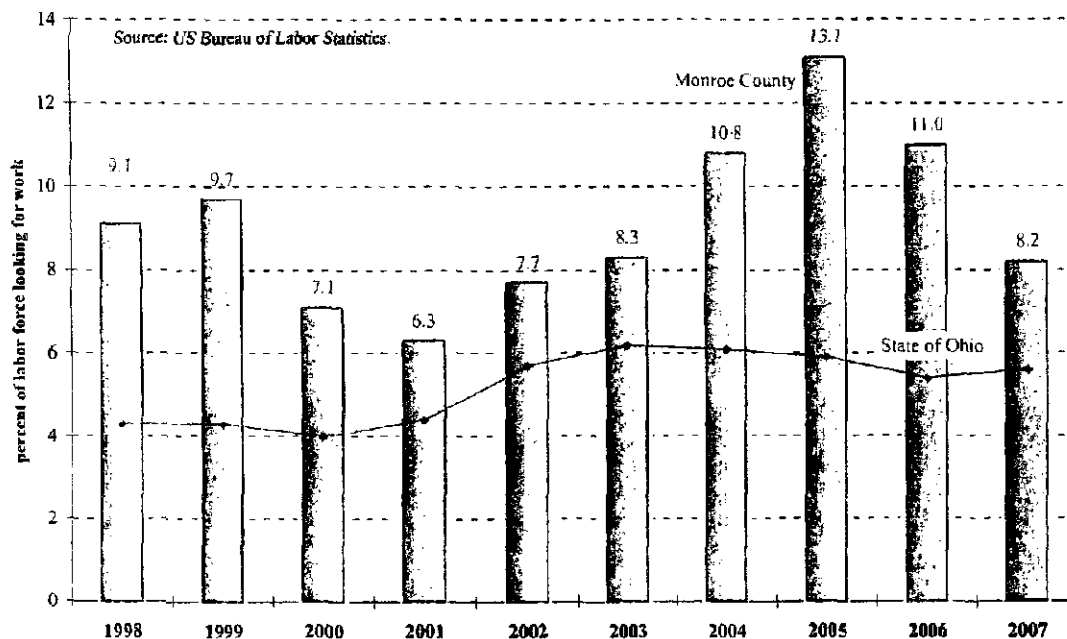
The effect of losing a large employer, particularly in a lightly populated county, goes far beyond the loss of payrolls. Often the company is the primary force in the local housing market, the largest contributor of property taxes to the local school system, the largest contributor of health care benefits and therefore the largest indirect customer of the local hospital, and the largest contributor of dollars and time to local charities. Moreover, when a large plant closes, not only do public revenues fall but public costs go up. Other statewide employers and employees must contribute to pay for the unemployment benefits to laid off workers, increased Medicaid costs as families lose income and health insurance coverage, and overall increased social services costs. Crime rates tend to rise with unemployment, as do alcohol and drug addiction. Local community and technical colleges see enrollments surge as laid off workers try to retrain. And major community investments must be made in economic development efforts to replace the lost engines.

The linkage between smelter closures and local unemployment is clear from the public data on Monroe County. In the next chart I provide the official estimates of unemployment rates in Monroe and for the state of Ohio as a whole. The state of Ohio tracks the national unemployment rate fairly closely, and one can see the effects of the 2001-02 recession, with Ohio's unemployment rate rising from four to six percent, before



falling in 2005. Monroe County has been consistently higher than the state average. And it is clear that Monroe had a major jump in unemployment when the Ormet smelter was idled during the 2004-06 period, and fell in 2007 after the plant was back in production.

### Estimated Unemployment Rates Monroe County and State of Ohio



I now turn to a discussion of the methods used to measure economic and fiscal impacts.

## METHODOLOGY

Because the aluminum and related manufacturing operations serve primarily national and international markets, they bring new dollars into the regional economy. In this sense, a shut-down of the smelter would have large and predictable negative economic and fiscal impacts in these Ohio and West Virginia counties. The activity supports thousands of jobs and millions of dollars in payrolls, and ultimately large tax revenues for Ohio and West Virginia state and local governments. In this section, I explain how I defined the regional economic footprint for purposes of this impact study, and discuss in some detail the input-output model and tax rate calculations used to measure the regional impacts.

### The Regional Economy

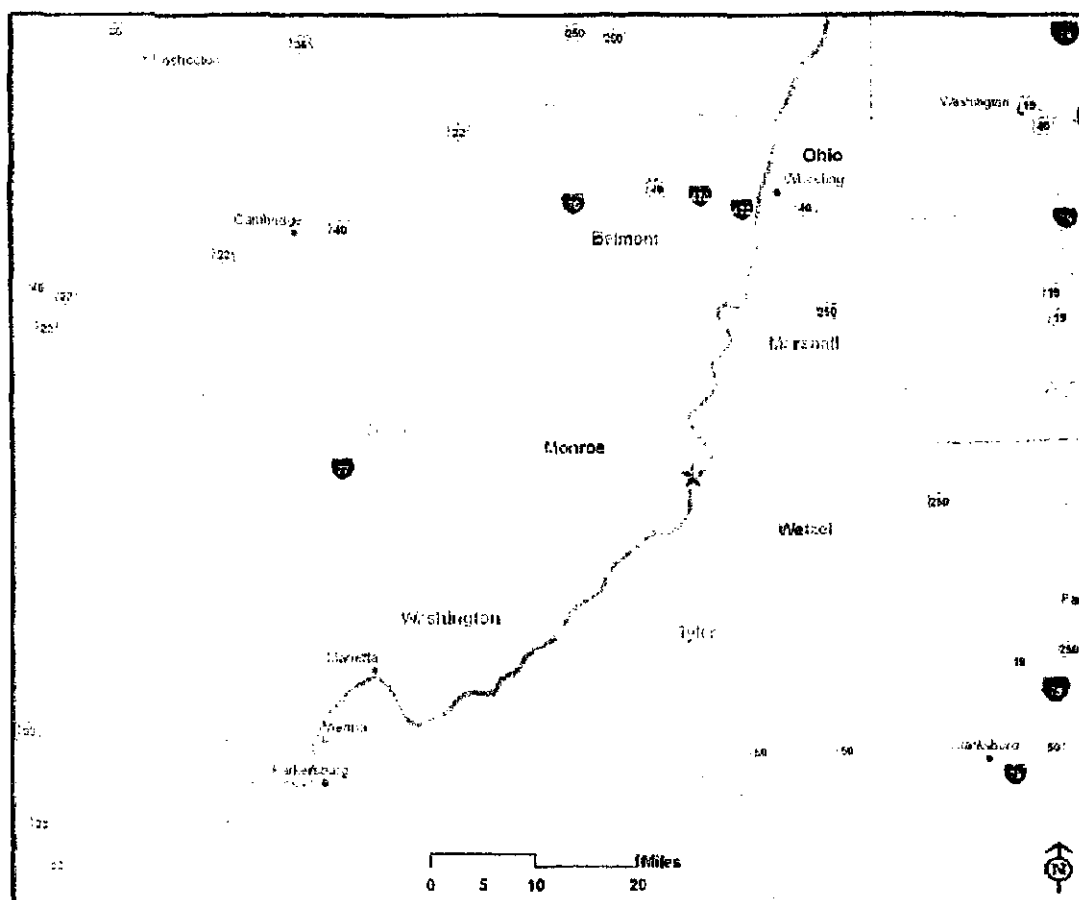
While Monroe County is the site for the aluminum plant, the economic and fiscal impacts permeate a much larger region. I define the impact region based on the geographic footprint of the workforce. Workers commute in to the aluminum plant, and take their paychecks to their home county, where they pay for housing and many retail and personal services. Ormet provided a breakdown of employment by county of residence, as shown in the accompanying table. Workers reside in eighteen counties in three states. Note however that 96 percent of employees reside in the top seven counties, those nearest to Monroe County. Three of these counties are in Ohio and four are in West Virginia. Interestingly, almost as many workers live in West Virginia (427) as in Ohio (598).

The map on the next page shows the regional counties, major cities, road and water features in the economic impact area. The counties shaded yellow are the top places of residence for Ormet employees, and these are the ones we use to investigate impacts. The red star denotes the approximate location of the Ormet plant and Hannibal, Ohio.

The Census Bureau has published population estimates for counties as of July 2007, and these are shown in the next table.

The Bureau provides a breakout of the components of population change, showing growth from natural increase (births minus deaths), net domestic migration, plus net international migration. It is evident from these data that the region is losing residents due to both deaths and out-migration. Overall, the region has lost about 12,000 residents this decade, a decline of nearly five percent. There were 3,000 more deaths than births, and net out-migration of over 8,000 residents. All

Ormet Hannibal Reduction Plant County of Residence of Employees		
County	State	Number
Monroe	OH	337
Wetzel	WV	226
Belmont	OH	162
Washington	OH	87
Marshall	WV	75
Tyler	WV	68
Ohio	WV	33
Pleasants	WV	10
Wood	WV	8
Guernsey	OH	6
Jefferson	OH	3
Harrison	OH	2
Brooke	WV	2
Jackson	WV	2
Ritchie	WV	2
Washington	PA	2
Noble	OH	1
Harrison	WV	1
Total		1,027



counties lost residents over the period, and all but one (Washington County, Ohio) had more deaths than births – a sign of an aging regional population. Monroe County, site of the Ormet aluminum smelter and home to one-third of the Ormet employees, has about 900 less residents now than at the beginning of the decade, a decline of six percent.

Components of Population Change, 2000 to 2007

Counties	Population, 2000 Census	Births	Deaths	Net Domestic Migration	Net International Migration	statistical residual	Population July, 2007	change this decade
Belmont, OH	70,226	5,134	6,601	-615	76	-312	67,908	-2,318
Monroe, OH	15,180	1,121	1,316	-677	15	-65	14,258	-922
Washington, OH	63,251	5,055	4,992	-1,509	22	-251	61,576	-1,675
Marshall, WV	35,519	2,456	2,778	-1,891	7	-165	33,148	-2,371
Ohio, WV	47,427	3,447	4,282	-2,200	158	-158	44,398	-3,029
Tyler, WV	9,592	653	832	-423	6	-44	8,952	-640
Wetzel, WV	17,693	1,406	1,503	-1,100	5	-69	16,432	-1,261
7-County Region	258,888	19,272	22,304	-8,415	289	-1,064	246,672	-12,216

Source: US Census Bureau

I have also organized some aggregate economic indicators on the counties in the region. Estimates for the last five year period available are shown in the next table. Clearly, the idling of the Ormet facility during 2005 and 2006 had a major effect on jobs and payroll in the region. Note that Monroe County suffered by far the greatest job loss, and was the only county to have less wages and salaries in 2006 than in 2001. Moreover, due to the loss of so many high paying jobs at Ormet, Monroe County had almost no growth in average pay per job during this period. Presumably all these indicators will improve now that the smelter is back to full production. However, it will be a year or two before there is sufficient data to measure the regional economic improvements.

Summary Economic Indicators for 7-County Region

	2001	2006	Growth	Growth Rate
<b>Jobs, wage and salary (excl. self-employed)</b>				
Belmont, OH	25,698	26,099	401	1.6%
Monroe, OH	4,913	3,319	-1,594	-32.4%
Washington, OH	26,198	26,631	433	1.7%
Marshall, WV	11,788	11,986	198	1.7%
Ohio, WV	30,464	31,204	740	2.4%
Tyler, WV	2,476	2,425	-51	-2.1%
Wetzel, WV	5,088	4,948	-140	-2.8%
Total, 7-County Region	106,625	106,612	-13	0.0%
<b>Jobs, manufacturing industries</b>				
Belmont, OH	1,648	1,402	-246	-14.9%
Monroe, OH	2,109	360	-1,749	-82.9%
Washington, OH	5,160	4,280	-880	-17.1%
Marshall, WV	2,303	1,800	-503	-21.8%
Ohio, WV	1,426	1,554	128	9.0%
Tyler, WV	877	695	-182	-20.8%
Wetzel, WV	131	149	18	13.7%
Total, 7-County Region	13,654	10,240	-3,414	-25.0%
<b>Total wages and salaries paid</b>				
Belmont, OH	\$582,711,000	\$700,282,000	\$117,571,000	20.2%
Monroe, OH	\$140,089,000	\$97,707,000	-\$42,382,000	-30.3%
Washington, OH	\$748,473,000	\$846,663,000	\$98,190,000	13.1%
Marshall, WV	\$394,602,000	\$459,070,000	\$64,468,000	16.3%
Ohio, WV	\$775,510,000	\$941,534,000	\$166,024,000	21.4%
Tyler, WV	\$75,540,000	\$83,713,000	\$8,173,000	10.8%
Wetzel, WV	\$106,967,000	\$117,805,000	\$10,838,000	10.1%
Total, 7-County Region	\$2,823,892,000	\$3,246,774,000	\$422,882,000	15.0%
<b>Average wages and salaries per job</b>				
Belmont, OH	\$22,675	\$26,832	\$4,156	18.3%
Monroe, OH	\$28,514	\$29,439	\$925	3.2%
Washington, OH	\$28,570	\$31,792	\$3,223	11.3%
Marshall, WV	\$33,475	\$38,301	\$4,826	14.4%
Ohio, WV	\$25,457	\$30,174	\$4,717	18.5%
Tyler, WV	\$30,509	\$34,521	\$4,012	13.2%
Wetzel, WV	\$21,023	\$23,809	\$2,785	13.2%
Total, 7-County Region	\$26,484	\$30,454	\$3,970	15.0%

Source: US Bureau of Economic Analysis

### Input-output model of the region

I use standard regional economic impact methods to evaluate the economic and fiscal impacts of the aluminum plant. I purchased detailed economic data for the seven counties most impacted, and used them to build an IMPLAN input-output model of the region. The model is able to simulate the effects of changes in economic activity for any of 500 regional industries. It also can predict detailed inter-industry purchases and household spending related to industrial changes.

In IMPLAN the sector of interest for this study is number 209, Primary Aluminum Production. This industry is defined according to the North American Industrial Classification System (NAICS) code 331312. The official definition is as follows:

This U.S. industry comprises establishments primarily engaged in (1) making aluminum from alumina and/or (2) making aluminum from alumina and rolling, drawing, extruding, or casting the aluminum they make into primary forms (e.g., bar, billet, ingot, plate, rod, sheet, strip). Establishments in this industry may make primary aluminum or aluminum-based alloys from alumina.

[www.census.gov/epcd/naics02/def/ND331312.HTM#N331312](http://www.census.gov/epcd/naics02/def/ND331312.HTM#N331312)

The IMPLAN model provides estimates of indirect (inter-industry purchases) and induced (household spending) effects on sales, jobs, and payrolls for export-based expansions or contractions of any of 500 local industries. For example, the job multiplier for the primary aluminum production industry in the Hannibal region economic area is 3.351, meaning that for every job at the aluminum smelter, another 2.351 jobs are created elsewhere in the regional economy. Similarly, the employee compensation multiplier for the industry there is 1.806, meaning that for every dollar of payroll created at the aluminum smelter another \$0.806 in payrolls are created in other sectors around the region.

Regional economists often make the distinction between the indirect and induced components of a multiplier, and in some cases make separate estimates for each. The indirect effects refer to the linkages between the exporting industry (aluminum) and their industrial vendors (transportation, electricity, barges, tools, computers, insurance). When the directly impacted industry expands, it raises its purchases from its vendors, thus lifting their employment and payrolls. The induced effects refer to the impact of the new export-based sales on the local economy through the rounds of re-spending of the additional household income caused by the expansion. Regional sales of cars, groceries, building supplies, banking services, and so on are all sensitive to growth in disposable income. In the next table, I show the top 20 regional industries linked to primary aluminum activity, as predicted by the IMPLAN model. I simulated the impact of 1,027 aluminum jobs on the 7-county region, and investigated the decomposition of the impacts in terms of inter-industry linkages and household purchases. One can see the largest inter-industry impacts are in trucking, power supply, and wholesale trade industries. Aluminum employees spend much of their paychecks in the region and this creates other

jobs, primarily in retail and personal service industries. The greatest impact is on restaurants, followed by two health care industries.

**Top 20 Regional Industries Linked to Primary Aluminum Industry**

Linked through interindustry purchases	number of jobs	Linked through household spending	number of jobs
Truck transportation	298.0	Food services and drinking places	144.5
Power generation and supply	187.9	Hospitals	74.5
Wholesale trade	58.3	Offices of physicians- dentists- and other health	71.2
Management of companies and enterprises	50.3	Private households	49.5
Food services and drinking places	45.7	Food and beverage stores	46.9
Civic- social- professional and similar organizations	28.2	General merchandise stores	46.5
Maintenance and repair of nonresidential buildings	27.7	Nursing and residential care facilities	45.5
Monetary authorities and depository credit intermediaries	23.2	Social assistance- except child day care services	40.0
Legal services	20.6	Motor vehicle and parts dealers	38.8
Automotive repair and maintenance- except car wash	17.8	Wholesale trade	37.5
Architectural and engineering services	17.6	Civic- social- professional and similar organizations	26.5
Other State and local government enterprises	17.2	Real estate	25.3
Hotels and motels- including casino hotels	17.0	Building material and garden supply stores	22.8
Waste management and remediation services	16.6	Miscellaneous store retailers	22.3
Accounting and bookkeeping services	15.7	Colleges- universities- and junior colleges	22.1
Oil and gas extraction	14.4	Monetary authorities and depository credit intermediaries	19.6
Scenic and sightseeing transportation and support	14.2	Nonstore retailers	18.9
Investigation and security services	14.0	Other ambulatory health care services	18.2
Commercial machinery repair and maintenance	14.0	Home health care services	18.0
Employment services	13.0	Personal care services	16.6

Source: IMPLAN model of 7-county region, using 2006 job and wage estimates by industry.

### Taxes and fiscal impacts

There are no good national sources of data on which to make estimates of the fiscal impacts of an industrial expansion or contraction in a region. The company has provided detailed records on direct tax payments to local and state governments, including property taxes, sales taxes, and electricity taxes. We aggregate these in our fiscal impact statement in the next section. However, the impacts on governments are much greater than these direct payments. Employees pay sales taxes when they spend their wages in the local economy, and are liable for income taxes in Ohio and West Virginia, depending on their county of residence. We can estimate these payments using published data on tax receipts from Ohio and West Virginia state governments, as well as tax information from city and county governments in the region. By comparing the growth in tax receipts to the growth in payrolls historically, I calculate 'effective' tax rates and use those to estimate the amount of income and sales taxes linked to the aluminum industry payrolls.

The calculations are shown in the next table. Good county-level detail is available for Ohio, and in West Virginia I rely on state totals only. Note, for example, that residents of the three Ohio counties paid an average of \$67.3 million in state individual income taxes the past three years. This amounts to 4.2 percent of all wages and salaries paid in those counties. I use this as the effective state income tax rate of Ohio County government, and apply it to the Ormet-related wages and salaries flowing to Ohio residents to estimate income tax payments. A similar calculation was made for Ohio state and local sales taxes generated. County level tax collections were not available for West Virginia, so we use the statewide average of income and sales tax collections as a share of wages and salaries paid there. We apply the resulting effective tax rates to the portion of Ormet-related wages and salaries predicted to flow to West Virginia residents.

Additional tax impacts are also likely, though much harder to quantify. For example, proprietors and corporations around the region are liable for state individual and corporate income taxes. Gasoline taxes, unemployment insurance taxes, insurance premiums taxes, building permit fees, motor vehicle sales taxes, and many other business tax categories would see some decline if the smelter were to shut-down. Employees would also pay less in the way of gasoline taxes, motor vehicle sales taxes, and there would be dampening effect on the regional real estate market. These categories are much harder to measure than the income and general sales taxes, but fortunately are not as important dollar-wise as the main taxes I do measure in this report.

Effective Tax Rate Calculations				
	2004	2005	2006	Average, 2004 - 2006
<b>Ohio state income taxes received from</b>				
Belmont	\$29,443,682	\$30,132,266	\$30,851,757	\$30,142,569
Monroe	\$5,026,975	\$4,874,912	\$5,135,252	\$5,012,379
Washington	\$32,047,893	\$31,518,872	\$33,014,350	\$32,193,705
subtotal	\$66,518,550	\$66,526,050	\$69,001,359	\$67,348,653
<b>Ohio state sales taxes received from</b>				
Belmont	\$43,523,697	\$44,248,981	\$42,373,952	\$43,382,210
Monroe	\$4,244,878	\$4,419,030	\$4,424,459	\$4,362,789
Washington	\$32,924,951	\$32,839,308	\$34,507,745	\$33,424,001
subtotal	\$80,693,525	\$81,507,319	\$81,306,156	\$81,169,000
<b>Ohio County County sales taxes received</b>				
Belmont	\$11,870,099	\$12,067,904	\$11,556,532	\$11,831,512
Monroe	\$1,157,694	\$1,205,190	\$1,206,671	\$1,189,851
Washington	\$8,979,532	\$8,956,175	\$9,411,203	\$9,115,637
subtotal	\$22,007,325	\$22,229,269	\$22,174,406	\$22,137,000
<b>Wages and salaries paid</b>				
Belmont	\$665,738,000	\$683,297,000	\$700,282,000	\$683,105,667
Monroe	\$138,180,000	\$95,806,000	\$97,707,000	\$110,564,333
Washington	\$791,466,000	\$808,774,000	\$846,663,000	\$815,634,333
subtotal	\$1,595,384,000	\$1,587,877,000	\$1,644,652,000	\$1,609,304,333
Effective income tax rate, Ohio	4.2%	4.2%	4.2%	4.2%
Effective sales tax rate, Ohio	5.1%	5.1%	4.9%	5.0%
Effective sales tax rate, County	1.4%	1.4%	1.3%	1.4%
<b>West Virginia State Totals</b>				
State income tax receipts (FY)	\$1,074,912,080	\$1,171,987,478	\$1,344,720,394	\$1,197,206,651
State sales and use tax receipts (FY)	\$1,051,461,638	\$1,095,339,835	\$1,157,982,670	\$1,101,594,714
Wages and salaries paid	\$22,045,410,000	\$22,996,585,000	\$24,299,638,000	\$23,113,877,667
Effective income tax rate, WV	4.9%	5.1%	5.5%	5.2%
Effective sales tax rate, WV	4.8%	4.8%	4.8%	4.8%

Sources for tax receipt data: Ohio Department of Taxation ([http://tax.ohio.gov/channels/research/other\\_tax\\_statistics.stm](http://tax.ohio.gov/channels/research/other_tax_statistics.stm)), with state sales tax collections by county estimated from county sales tax, using ratio of tax rates (state 5.5%/county 1.5%); and West Virginia ([www.state.wv.us/taxrev/46thtaxlaws.pdf](http://www.state.wv.us/taxrev/46thtaxlaws.pdf)).

### IMPACTS

In this section, I display and explain my estimates of the economic and fiscal impacts of the aluminum smelter. I am essentially simulating what would happen if the operation was removed from the region. The plant employs over 1,000 persons with an annual payroll of over \$56 million, excluding benefits. Direct tax payments by the company plus tax withholdings for employees are about \$2.8 million.

#### Estimated Annual Economic and Fiscal Impacts of the Ormet Aluminum Facility in Hannibal, Ohio

Direct impacts		
1	Jobs	1,027
2	Wages and salaries	\$56,083,139
3	Other employee compensation, labor costs	\$51,905,121
4	Taxes withheld or paid to Ohio state government	\$2,495,113
5	Taxes paid to local governments	\$336,934
Regional multipliers for primary aluminum		
6	Jobs - total	3,351
7	Employee compensation - total	1,806
Total impacts		
8	Jobs in region	3,441
9	Employee compensation in region	\$194,997,748
10	Income, sales, property and other taxes to Ohio state government	\$6,762,839
11	Income and sales taxes to West Virginia state government	\$4,183,104
12	Income, sales, and property taxes to local governments	\$336,934
13	Total tax revenues, all state and local governments	\$11,282,876

On lines 8 and 9, I provide estimates of the total effects – direct plus spinoff. Here I use economic multipliers to estimate the job and employee compensation impacts regionally. I estimate the total job impact in the 7-county region to be over 3,400 jobs, and the employee compensation impact to be about \$195 million annually. Employee compensation includes many company provided fringe benefits, most of which are not taxable. So, I estimate the share (52 percent) of the total employee compensation that is taxable wages and salaries, and use that to estimate fiscal impacts.

The company does not know the amount of Ohio and West Virginia state income taxes actually paid by their employees, since employees file income tax returns from their place of residence. The company does withhold state income taxes from workers paychecks, but have no way of knowing how much additional tax employees ultimately end up paying, or how big of a tax refund they receive each year. To estimate the state income taxes paid, I applied effective income tax rates, as described in the previous section. These estimates are shown in lines 10 and 11. I estimate that Ohio state government is receiving about \$6.8 million annually in individual income taxes, sales taxes, and



electricity taxes from Ormet-related activity<sup>3</sup>. West Virginia state government receives about \$4.2 million. And local governments receive over \$300,000 in tax revenues.

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<sup>3</sup> The full fiscal impact would be more than the tax receipts lost, since the state would have to incur tens of millions of dollars in costs for unemployment compensation and increased Medicaid expenditures in the region if the plant shut down and the employees lost their jobs.

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

<b>In the Matter of the Application of</b>	)	
<b>Ormet Primary Aluminum</b>	)	
<b>Corporation for Approval of a</b>	)	<b>Docket No. 09-119-EL-AEC</b>
<b>Unique Arrangement with Ohio</b>	)	
<b>Power Company and Columbus</b>	)	
<b>Southern Power Company</b>	)	

**DIRECT TESTIMONY OF HENRY W. FAYNE  
ON BEHALF OF ORMET PRIMARY ALUMINUM CORPORATION**

**April 23, 2009**

1    **Q:    PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2    A:    My name is Henry W. Fayne. My business address is 1980 Hillside Drive,  
3           Columbus, Ohio 43221.

4    **Q:    PLEASE BRIEFLY DESCRIBE YOUR BUSINESS AND EDUCATIONAL**  
5           **BACKGROUND.**

6    A:    I have been a consultant in the electric energy sector since the beginning of 2005,  
7           following my retirement from American Electric Power (AEP). I was employed  
8           by AEP in various positions for thirty years from 1974 through 2004, including as  
9           Executive Vice President and Chief Financial Officer from 1998 until 2001, and  
10          as Executive Vice President Energy Delivery from 2001 until I retired in 2004. I  
11          have a bachelors degree in economics from Columbia College and an MBA in  
12          finance from Columbia Graduate School of Business.

1    **Q.    PLEASE DESCRIBE YOUR RELATIONSHIP TO ORMET PRIMARY**  
2       **ALUMINUM CORPORATION.**

3    A.    Ormet Primary Aluminum Corporation (“Ormet”) has retained me to facilitate  
4       their contract negotiations with Columbus Southern Power Company and Ohio  
5       Power Company (collectively, “AEP Ohio”).

6    **Q:    HAVE YOU TESTIFIED PREVIOUSLY?**

7    A:    Yes. During my tenure at AEP, I testified before the regulatory commissions in  
8       the states of Indiana, Kentucky, Michigan, Ohio, Oklahoma, Texas, Virginia and  
9       West Virginia on behalf of various operating companies of AEP. I have also  
10      testified before the Federal Energy Regulatory Commission.

11   **Q:    WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**  
12       **PROCEEDING?**

13   A:    The purpose of my testimony is to describe the proposed unique arrangement with  
14       AEP.

15   **Q:    WHAT IS THE PURPOSE OF THE PROPOSED UNIQUE**  
16       **ARRANGEMENT?**

17   A:    As explained in the testimony of Mike Tanchuk, the proposed unique arrangement  
18       is intended to set a price of electricity that Ormet can afford to pay that would  
19       produce the minimum cash flow necessary to sustain operations and pay its  
20       required legacy pension costs depending on the LME price of aluminum. In  
21       simple terms, it is designed to provide the minimum discount required to avert a  
22       shutdown of the smelter and the resulting loss of jobs and severe economic

1 penalty to southeastern Ohio; it is not designed to provide a minimum return to  
2 investors.

3 **Q: WOULD YOU PLEASE DESCRIBE THE MAJOR COMPONENTS OF**  
4 **THE PROPOSED ARRANGEMENT?**

5 A: In summary, the proposed arrangement establishes each year the LME price at  
6 which Ormet can afford to pay the AEP Ohio tariff rate (the Target Price), the  
7 discount that is required to the extent that the annual LME price falls below the  
8 Target Price, and the premium that Ormet would pay if the annual LME price  
9 exceeds the Target Price. By indexing the price of electricity to the LME  
10 aluminum price, the arrangement insures that a discount is provided only to  
11 provide the minimum cash flow required for financial survival.

12 **Q: PLEASE DESCRIBE THE SPECIFIC COMPONENTS.**

13 A: The starting point is the Target Price, which is defined in Section 1.22 of the  
14 proposed contract. The Target Price is the annual LME price, defined in terms of  
15 dollars per metric ton, at which Ormet could afford to pay the AEP Ohio Tariff  
16 Rate and still maintain sufficient cash flow to sustain its operations at the  
17 Hannibal Facilities and to pay its required legacy pension costs. The Target Price  
18 will be set annually and submitted to the Commission no later than October 1 of  
19 each year for the succeeding year.

20 **Q: PLEASE CONTINUE.**

21 A: The next major component is the Indexed Rate, which is defined in Section 1.13  
22 of the proposed contract. The Indexed Rate is the rate schedule, in dollars per  
23 megawatthour, that Ormet would pay depending on the Annual LME Price of

1 Aluminum. The Indexed Rate schedule, along with the Target Price, will be  
2 submitted to the Commission no later than October 1 of each year for the  
3 succeeding year beginning with the calendar year 2010.

4 **Q: WHY DOES ORMET NOT INTEND TO SUBMIT AN INDEXED RATE**  
5 **SCHEDULE FOR 2009?**

6 A: As Mike Tanchuk explains in his testimony, Ormet has sold forward its 2009  
7 metal production; as a result, the revenues Ormet will receive are not affected by  
8 changes in the LME Price of aluminum. Therefore, Ormet has proposed a fixed  
9 electricity price of \$38/MWh when at full production and \$34/MWh when and if  
10 the smelter reduces production by two or more potlines. These are the electricity  
11 prices that Ormet could afford to pay and still meet its minimum cash flow  
12 requirements.

13 **Q: WHAT PRICE OF ELECTRICITY WOULD ORMET PAY IF THE**  
14 **ANNUAL LME PRICE OF ALUMINUM EXCEEDS THE TARGET**  
15 **PRICE?**

16 A: When the annual LME Price exceeds the Target Price, Ormet proposes to share  
17 the upside with AEP Ohio's other customers. Specifically, when the LME Price  
18 exceeds the Target Price by up to \$300/tonne, Ormet proposes to pay an  
19 electricity price equal to 102 percent of the AEP Ohio Tariff Rate. If the LME  
20 Price exceeds the Target Price by more than \$300/tonne, Ormet proposes to pay  
21 an electricity price equal to 105 percent of the AEP Ohio Tariff Rate.

1   **Q:   HAS ORMET PROVIDED FOR INDEPENDENT REVIEW OF THE**  
2   **PROPOSED ANNUAL SCHEDULES?**

3   A:   Yes. The proposed contract provided that the Commission may require an  
4       independent third-party review at Ormet's expense to assure that the estimated  
5       expenses are reasonable and that the proposed price of electricity is required to  
6       achieve the objectives discussed above.

7   **Q:   DOES THE PROPOSED ARRANGEMENT PROVIDE A FLOOR FOR**  
8   **THE PRICE OF ELECTRICITY?**

9   A:   Yes. The contract design recognizes that the LME Price of aluminum is cyclical  
10      and can vary widely. Because the Indexed Rate provides only the minimum cash  
11      flow required for survival, the contract was designed without a specific electricity  
12      price as a floor; this was done to avoid a shutdown of the smelter if the LME  
13      Price fell significantly for a short period of time. Instead the floor was defined on  
14      a contract-to-date basis, recognizing that there could be brief periods of  
15      significant discounts offset by other periods where there were small or no  
16      discounts from the AEP Ohio Tariff Rate. Specifically, the contract provides for  
17      Commission review if the cumulative net discount from the AEP Ohio Tariff Rate  
18      exceeds 50 percent of the amount Ormet would have been required to pay under  
19      the AEP Ohio Tariff Rate. In such event, the Commission would have the  
20      discretion, subject to the constraints defined in Section 2.03 of the contract, to  
21      modify the terms or to allow the contract to continue under its proposed terms.

22   **Q:   SEVERAL INTERVENERS HAVE SUGGESTED THAT THE PROPOSED**  
23   **FLOOR IS TOO LOW AND TOO FLEXIBLE. DO YOU AGREE?**

1 A: No. The purpose of this unique arrangement is to keep Ormet operating, preserve  
2 jobs and maintain the economic vitality of southeastern Ohio. It would be tragic  
3 if these goals were sacrificed simply because of a short term swing in the  
4 aluminum market. The cost of the proposed discount for discrete periods pales in  
5 comparison to the long term costs that would be incurred with the shutdown of the  
6 smelter and the loss of thousands of jobs in southeastern Ohio.

7

8 By establishing a contract-to-date discount trigger, the provisions allow Ormet to  
9 weather swings in the aluminum price cycle, ensure that Ormet will pay at least  
10 the equivalent of 50 percent of the AEP Ohio Tariff Rate (a fair approximation of  
11 variable cost), and provide the Commission the opportunity to evaluate the  
12 contract in the context of the State's goals and objectives in the event that a more  
13 significant discount is required for Ormet's survival.

14 **Q: WHAT IS THE PROPOSED DURATION OF THE CONTRACT?**

15 A: The contract duration is ten years. It is intended to be retroactive to January 1,  
16 2009 and continue through December 31, 2018. Regardless of the discount,  
17 however, the Commission has the discretion to modify the contract after seven  
18 years.

19 **Q: WHY IS ORMET PROPOSING A TEN-YEAR TERM?**

20 A: Ormet requires a long term power agreement in order to attract the necessary  
21 capital to continue to maintain and operate the Hannibal Facilities.

22 **Q: ARE THERE ANY OTHER PROVISIONS THAT YOU WISH TO**  
23 **HIGHLIGHT?**

1 A: Yes. Under its current arrangement with AEP, Ormet is required to maintain a  
2 deposit and to pay in advance for its energy use. Pursuant to Section 6.03 of the  
3 proposed contract, Ormet shall not be required to provide a deposit or pay in  
4 advance. This provision is intended to increase Ormet's cash flow and, thereby,  
5 allow Ormet to increase the Indexed Rate reflected in Ormet's schedule, thus  
6 reducing Delta Revenue. AEP has agreed to this change conditioned on a  
7 Commission order that provides AEP Ohio recovery of any amounts as a result of  
8 a default by Ormet.

9 **Q: DOES THE PROPOSED CONTRACT ADDRESS ENERGY EFFICIENCY**  
10 **AND DEMAND RESPONSE OPPORTUNITIES.**

11 A: To the extent that Ormet implements energy efficiency measures in the normal  
12 course of its process improvement activities, such energy efficiency gains may be  
13 included by AEP Ohio in meeting its energy efficiency requirements. To the  
14 extent Ormet identifies energy efficiency projects or demand response options  
15 that would require capital investment outside the normal course or that would  
16 impose a cost on Ormet, Ormet & AEP Ohio will determine whether to amend  
17 this agreement or to develop a separate agreement.

18 **Q: ARE THERE ANY OTHER PROVISIONS YOU WISH TO DISCUSS?**

19 A: Yes. The proposed power agreement is conditioned on approval of any petition of  
20 AEP Ohio to recover delta revenue for the life of the agreement. Delta revenue is  
21 defined as the revenue that would be recoverable from Ormet under the AEP Ohio  
22 Tariff Rate, but for this proposed power agreement, foregone by AEP Ohio as a  
23 result of the provisions of the power agreement, including as an event of default.



1    **Q:    DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?**

2    **A:    Yes, it does.**

**BEFORE THE  
PUBLIC UTILITIES COMMISSION OF OHIO**

**In the Matter of the Application of  
Ormet Primary Aluminum Corporation  
for Approval of a Unique Arrangement  
with Ohio Power Company and  
Columbus Southern Power Company**

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**Docket No. 09-119-EL-AEC**

**DIRECT TESTIMONY OF JAMES BURNS RILEY  
ON BEHALF OF ORMET PRIMARY ALUMINUM CORPORATION**

**April 23, 2009**

1   **Q.   PLEASE STATE YOUR NAME, TITLE, AND PLACE OF BUSINESS.**

2   A.   My name is James Burns Riley. I am the Chief Financial Officer of Ormet Corporation  
3       ("Ormet Corp."), which is the parent corporation of Ormet Primary Aluminum  
4       Corporation ("Ormet"). My business address is 43840 State Route 7, P.O. Box 176,  
5       Hannibal, OH 43931.

6   **Q.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7   A.   I am testifying to explain Ormet's current financial situation and explain the impact of the  
8       proposed Unique Arrangement upon Ormet.

9   **Q.   PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**  
10   **PROFESSIONAL EXPERIENCE.**

11   A.   I hold a BBA degree in Industrial Management from The University of Cincinnati. I also  
12       hold an MBA from Miami University in Finance. Prior to my current position I have  
13       held executive level financial positions for over 20 years.

14   **Q.   HOW LONG HAVE YOU BEEN WITH ORMET?**

15   A.   I have been in my current position with Ormet Corp. since July 1, 2007.

1    **Q.    PLEASE DESCRIBE YOUR RESPONSIBILITIES AT ORMET AND TO WHOM**  
2       **YOU REPORT.**

3    A.    My responsibilities include the oversight of all financial and IT functions and I report to  
4       Mr. Michael Tanchuk, President and CEO.

5    **Q.    PLEASE DESCRIBE ORMET'S CURRENT FINANCIAL SITUATION.**

6    A.    Ormet emerged from bankruptcy on April 1, 2005 and restarted its smelter operations in  
7       Hannibal Ohio commencing in December 2006 with the first line and completing the  
8       start-up of the sixth line on November 28, 2007. The cost of the restart and the working  
9       capital build forced Ormet to issue significant new equity and incur debt. Ormet is highly  
10      leveraged and when the legacy costs for pensions and retiree health care are included  
11      Ormet faces a formidable hurdle in times of lower prices for the aluminum now sold (i.e.  
12      sold in ingot form). Currently Ormet is operating under a tolling agreement which  
13      requires that Ormet convert alumina supplied by Glencore, LTD to aluminum for which  
14      Ormet is paid a tolling rate that was established in the spring of 2008. This contract  
15      expires at the end of 2009 and currently is above market based on current LME rates.  
16      Ormet's debt all comes due in either February or November of 2010 and some, if not all,  
17      of the debt will need to be refinanced at that time based on the availability in the debt  
18      market.

19   **Q.    DOES ORMET EXPECT ITS CURRENT FINANCIAL SITUATION TO**  
20       **CONTINUE?**

21   A.    Ormet has been deleveraging through the proceeds raised by asset sales and internally  
22       generated cash. Aluminum economic experts are forecasting significantly higher prices  
23       for aluminum in 2010 and 2011 which should allow Ormet to continue to operate as

1 currently configured. Additionally, Ormet is involved in litigation against Glencore, Ltd.  
2 ("Glencore"), its partner in its 2008-2009 tolling agreement, the outcome of which may  
3 impact Ormet's financial situation.

4 **Q. HOW IS THE PROPOSED UNIQUE ARRANGEMENT EXPECTED TO**  
5 **IMPACT ORMET'S FINANCIAL SITUATION?**

6 A. The proposed Unique Arrangement will contribute to keeping the Hannibal, Ohio Ormet  
7 facility operating.

8 **Q. HOW WILL THE PROPOSED UNIQUE ARRANGEMENT CONTRIBUTE TO**  
9 **KEEPING ORMET ALIVE?**

10 A. The price of aluminum is set on the London Metal Exchange ("LME"). Therefore, Ormet  
11 has no ability to affect the pricing of its product. Ormet's ability to compete globally is  
12 determined by its cost of production. The price of alumina, anodes and power costs are  
13 three of the most significant determinants of the viability of a smelter. If Ormet is to  
14 keep the Hannibal Facilities in operation, it must be able to procure electricity at a price  
15 that will enable Ormet to remain competitive on a world wide basis. The Unique  
16 Arrangement would tie the rate Ormet pays for electricity to the LME price of aluminum.  
17 This would allow Ormet to continue to produce aluminum and keep the Hannibal  
18 Facilities in operation when the price of aluminum falls below the threshold at which  
19 Ormet would otherwise have to curtail operations because it would not be able to sell  
20 aluminum at a sufficient price to pay its cash costs. The proposed Unique Arrangement  
21 will provide Ormet the price, terms and conditions of service it needs in order to continue  
22 to compete globally with other aluminum producers.

1    **Q.    IS THE PROPOSED UNIQUE ARRANGEMENT NECESSARY FOR ORMET TO**  
2        **KEEP THE HANNIBAL FACILITIES OPERATING?**

3    A.    Yes. The proposed Unique Arrangement is designed to help Ormet bridge the potentially  
4        turbulent economic situation over the next few years so that it can stay in business in  
5        Ohio for the long term. Ormet has been struggling to balance its power costs since it  
6        emerged from bankruptcy in 2005. Ormet's ability to control the price at which it can  
7        sell its output is extremely limited. Therefore, in order to keep its Hannibal Facilities  
8        operating, Ormet must be able to control its costs of production. Tying Ormet's cost of  
9        electricity to the LME price for aluminum is a critical component of enabling Ormet to  
10       survive financially.

11   **Q.    WHY IS TYING THE RATE THAT ORMET PAYS FOR ELECTRICITY TO**  
12        **THE LME PRICE OF ALUMINUM CRITICAL TO ORMET?**

13   A.    Currently, electricity constitutes approximately 35 percent of Ormet's total cash costs or  
14        39 percent of the cash smelter costs; therefore the cost of electricity has a significant  
15        effect on Ormet's overall cost. Ormet's cash cost cannot exceed the price at which it can  
16        sell the aluminum if Ormet is to sustain operations at the Hannibal Facilities. The  
17        Unique Arrangement is designed to help prevent the cost of electricity from driving  
18        Ormet's costs over the price at which Ormet can sell aluminum.

1    **Q.    ARE THERE OTHER COSTS THAT ORMET COULD REDUCE IN ORDER TO**  
2           **OFFSET RISING ENERGY COSTS OR FALLING ALUMINUM PRICES IN**  
3           **ORDER TO KEEP THE HANNIBAL FACILITIES IN OPERATION?**

4    **A.    Ormet's ability to adjust other costs as the LME price of aluminum fluctuates is**  
5           **extremely limited. 17 percent of Ormet's costs are fixed and cannot be reduced in the**  
6           **short or intermediate term if Ormet is to continue to operate such as pension payments,**  
7           **VEBA contributions, insurance and taxes. The other significant cost reflecting 31**  
8           **percent of Ormet's costs is for baked anodes which is highly dependent on the world**  
9           **prices of petroleum coke. Ormet only has the ability to adjust 17 percent of its non-**  
10          **electricity costs on a month-to-month basis, with hourly labor controlled by a collective**  
11          **bargaining contract making up over three quarters of that amount.**

12   **Q.    WHAT ARE THE LEGACY COSTS INCLUDED IN CASH COSTS THAT**  
13          **ORMET MUST PROVIDE FOR IN ORDER TO KEEP THE HANNIBAL**  
14          **FACILITIES IN OPERATION?**

15   **A.    Ormet must also pay large legacy costs including approximately \$28.9 million in pension**  
16          **contributions for 2009 which will increase to \$51.6 million for 2010. Voluntary**  
17          **Employee Beneficiary Association payments will be approximately \$8.3 million and**  
18          **\$11.8 million for 2009 and 2010, respectively. I estimate the cash costs of these**  
19          **liabilities over the next five years to be approximately \$241 million.**

1    **Q.    COULD ORMET REDUCE COST BY REDUCING EMPLOYEE SALARIES**  
2           **AND WAGES?**

3    A.    Ormet cannot achieve significant savings by reducing employee salaries. Ormet is  
4           staffed very leanly at the executive level. Executive salaries represent less than one half  
5           of one percent of Ormet's total costs. Additionally, most of Ormet's labor force are  
6           members of the United Steelworkers of America union and their wages are set through  
7           collective bargaining agreements. The total salary and hourly labor costs, excluding  
8           legacy costs, represent only 16.2 percent of total cash costs

9    **Q.    DOES THE PROPOSED UNIQUE ARRANGEMENT GUARANTEE THAT**  
10           **ORMET WILL EARN A PROFIT OR A PARTICULAR RATE OF RETURN ON**  
11           **EQUITY?**

12   A.    No. The proposed Unique Arrangement is designed only to assure that Ormet has the  
13           minimum cash flow necessary to keep the Hannibal Facilities in operation and to allow  
14           Ormet to survive financially. The Unique Arrangement dictates that the Target Price and  
15           Indexed Rate be set as the price at which Ormet could afford to pay the AEP Tariff Rate  
16           and still have the minimum cash flow needed to keep the Hannibal Facilities in operation.  
17           The Unique Arrangement is a cash flow driven measurement and provides for Ormet to  
18           pay 102 percent of the AEP Ohio Tariff Rate if the LME exceeds the Target Price by up  
19           to \$300 per metric tonne and 105 percent if it exceeds \$300 per metric tonne above the  
20           Target Price.

1    **Q.    WHO CALCULATES THE TARGET PRICE AND INDEXED RATE UNDER**  
2       **THE UNIQUE ARRANGEMENT?**

3    A.    The Target Price will be calculated by me.

4    **Q.    HOW WILL THE TARGET PRICE AND INDEXED RATE BE CALCULATED**  
5       **UNDER THE UNIQUE ARRANGEMENT?**

6    A.    We prepare an annual plan that will include the detailed forecast for the year. I will  
7       examine Ormet's expected revenues and production costs for the upcoming year  
8       including the cost of alumina, carbon anodes, payroll costs, etc. and calculate, based on  
9       the cash flow generated, the rate Ormet will pay for electricity and the Target LME price  
10      of aluminum in order to allow Ormet to generate sufficient cash flow to keep the  
11      Hannibal Facilities in operation.

12   **Q.    HOW WILL THE CALCULATION OF THE TARGET PRICE AND INDEXED**  
13      **RATE BE VERIFIED?**

14   A.    Ormet has agreed under the proposed Unique Arrangement to allow the schedules it  
15      submits each year calculating the Target Price and Indexed Rate to be audited by an  
16      independent third party auditor who will have complete access to Ormet's books and  
17      records.

18   **Q.    WHAT INCENTIVE DOES ORMET HAVE UNDER THE PROPOSED UNIQUE**  
19      **ARRANGEMENT TO EFFECTIVELY CONTROL ITS COSTS?**

20   A.    If Ormet is receiving a rate under the Unique Arrangement that is lower than the AEP  
21      Ohio Tariff Rate then Ormet will only be earning enough cash to pay its bills. It will not



1 be earning an adequate return to obtain a satisfactory stock price or to allow the Company  
2 to grow and prosper. Ormet must continually improve its performance and resulting cost  
3 structure, which includes electricity, if it is to be successful.

4 **Q. WHY HAS ORMET PROPOSED A FIXED RATE FOR 2009 RATHER THAN AN**  
5 **INDEXED RATE?**

6 A. Ormet proposed a fixed rate in the Unique Arrangement for 2009 to reflect that Ormet  
7 had entered into a tolling agreement setting the price at which Ormet would sell its output  
8 at a fixed price for the duration of 2009.

9 **Q. ORMET RECENTLY AMENDED THE CONTRACT TO REFLECT THE**  
10 **POSSIBILITY OF CURTAILMENT OF THE HANNIBAL OPERATIONS IN**  
11 **2009. WHY?**

12 A. Changing market conditions since Ormet submitted its initial Application in this  
13 proceeding made it increasingly apparent that Ormet would need to consider the  
14 possibility of curtailing its operations in 2009, possibly as early as late May.  
15 Furthermore, if Glencore does not continue shipping alumina and otherwise performing  
16 its obligations under the 2008-2009 tolling agreement, Ormet's operations will be  
17 detrimentally affected.

18 **Q. WHY WOULD A CURTAILMENT OF OPERATIONS AT HANNIBAL**  
19 **REQUIRE AN ALTERATION OF THE RATE FOR 2009?**

20 A. Ormet anticipates that in the event Ormet is able to keep at least four potlines in  
21 operation, such a curtailment would be temporary in nature, and Ormet would intend to  
22 restart any curtailed pot lines as soon as market conditions permit. Ormet is also

1 committed to retaining as many jobs in Ohio as possible until the end of the year. To that  
2 end, during the potential curtailment of at least two of its potlines, Ormet plans to keep at  
3 least 900 jobs at the Hannibal Facilities, so that it has personnel on hand to facilitate a  
4 quick restart of the curtailed potlines. To keep that many positions at Hannibal with a  
5 curtailment of production, Ormet must have reduced electricity rates, as proposed in the  
6 amended Unique Arrangement. However, if operations fall materially below the four  
7 potline level, additional personnel reductions may be required and Ormet would resume  
8 the \$38/MWh rate for the remaining operations.

9 **Q. DOES THIS CONCLUDE YOUR PREPARED TESTIMONY?**

10 **A.** Yes it does.

### **CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing Testimony has been served upon the below-named persons via regular U.S. Mail Service, postage prepaid, this 23rd day of April, 2009.



Emma F. Hand

Attorney for Ormet Primary Aluminum Corporation

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