

David M. Anderson
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Battelle Pacific Northwest Division
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SUMMARY

Performed, planned, managed, and published technical economic and policy analysis in the areas of regional economics, community economic development, socioeconomic impact assessment, economic and market survey analysis, energy economics, and agriculture and natural resource economics.

- + National Environmental Policy Act (NEPA) planning and economic impact modeling.
- + Nuclear Regulatory Commission Early Site Permit and License Renewal EIS Team.
- + Local economic development analytical support.
- + National and regional economic input-output modeling and analysis.
- + Economic and performance analysis of energy efficiency issues.
- + Natural resource economics including tourism, water, agriculture, forestry.
- + Environmental justice and other socioeconomic analysis.
- + Database and GIS development and application.
- + Energy efficiency policy analysis.
- + Banking regulatory performance assessment.

EDUCATION

M.S. Forest Economics, Oregon State University, 1991
B.S. Forest Resources, Oregon State University, 1989

EXPERIENCE

SENIOR RESEARCH ECONOMIST

Battelle Pacific Northwest Division, Pacific Northwest National Laboratory, Richland, Washington, 1991-1997, and 2001- Present.

Performed, planned, managed, and published technical economic and policy analysis in the areas of regional economics, community economic development, socioeconomic impact assessment, economic and market survey analysis, energy economics, and agriculture and natural resource economics.

- + National Environmental Policy Act (NEPA) planning and economic impact modeling for NRC and other Federal agencies.
- + Resource Coordinator or subject matter expert for NRC New Reactors Office in the areas of Socioeconomics/Environmental Justice, Need for Power, and Land Use resources.
- + Utility grid energy efficiency analysis and transmission planning.
- + Critical Infrastructure Protection and other DHS economic analysis.

- + National and regional economic input-output modeling and analysis.
- + Economic and performance analysis of energy efficiency issues.
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- + Database and GIS development and application.
- + Energy efficiency policy analysis.
- + Banking regulatory performance assessment.

CORPORATE COMMUNITY REINVESTMENT ANALYST

Washington Mutual Bank, Community Reinvestment Resources Department, Seattle, Washington, 1997-2001.

- + Initiated and developed the analysis and reporting capability relating to the Community Reinvestment Act (CRA) at Washington Mutual, the nation's largest residential lender.
- + Analyzed and reported national, regional, and localized mortgage, consumer, and small business lending performance, including analytical mapping.
- + Developed goals and associated measures for administration of CRA lending programs nationally, including a 10-year \$120 billion Community Commitment.
- + Tracked the regional economies of Washington Mutual's nationwide markets.
- + Performed detailed demographic, political, and market analyses of specific underserved banking markets such as low and moderate-income borrowers, minority markets, traditionally underserved neighborhoods, and rural markets.
- + Regularly prepared presentation materials, figures, and summaries for executive management and the CEO.
- + Supported a nationwide staff of outreach officers by providing them with market performance, regional economic, analytical mapping, and lending performance reporting products.
- + Developed large-scale databases to support corporate lending performance reporting needs.
- + Developed regulatory exam materials for use by bank examiners to aide in determining CRA compliance ratings.
- + Led the technology needs assessment effort in the Department, including complete systems reengineering and integration of internet functionality as part of a corporate initiative.
- + Integrated CRA performance reporting systems of acquired institutions in three major corporate mergers.

RESEARCH ASSISTANT

Oregon State University, College of Forestry, Corvallis, Oregon, 1989-1991

Graduate Research Assistant in the Forest Economics program. Participated in numerous natural resource economics and policy research activities including work to develop innovative approaches to managing the recovery of the Northern spotted owl on federal lands in Oregon. Also contributed to a market research study of Alpine Lakes Wilderness permittees. Assisted in design of complex survey instrument and sampling methodology. Provided survey database technical support to several market research studies. Masters Thesis project involved modeling of tourism expenditures on the Mount Hood National Forest to determine their economic impact on the Portland metro area economy. Began as an undergraduate research assistant, 1987-89.

INDEPENDENT CONSULTANT

Self Employed, Corvallis, Oregon, 1988-1991

Consulted on research projects peripheral to the Oregon State University, College of Forestry. These included natural resource interpretation design, field research on resource interpretation site development, socioeconomic research, and travel and tourism research projects. Various intermittent projects for professors working on the side from 1988-1991.

RECREATION RANGER

U.S. Bureau of Land Management, Burns District, Burns, Oregon, Summer 1988.

Responsible for visitor services on the 2.7 million acre Andrews Resource Area. Duties included visitor services and monitoring within the 200,000 acre Steens Mountain Recreation Lands. Administered the "Interim Management Plan" for 1.1 million acres of proposed wilderness including inventory, reconnaissance, and restoration of damaged sites. Undergraduate Internship: Produced visitor use report and economic valuation of Steens recreation.

COMPUTER LAB TECHNICAL SUPPORT

O.S.U. College of Forestry, Corvallis, Oregon, 1987-1989.

Responsible for operation of the College's PC workstation computer facility that services the entire forestry education and research communities of Oregon State University. Helped students and staff learn computer techniques. Taught training and orientation courses. Served as teaching assistant in several computer applications courses.

PROGRAM ASSISTANT

O.S.U. Outdoor Recreation Center, Corvallis, Oregon, 1987-1990

Responsible for development and implementation of "Discovery Program". Planned and administered outdoor recreation program's trips and outdoor classes in the areas of hiking, backpacking, canoeing, nordic and alpine skiing, mountain climbing, caving, whitewater rafting, and wildlife viewing for the University community.

PARK RANGER

U.S. Army Corps of Engineers, Cottage Grove and Dorena Projects, Cottage Grove, Oregon, Summer 1987.

Responsible for visitor services on Cottage Grove and Dorena Reservoir projects. Duties included interacting with park and campground visitors in several developed parks and campgrounds, monitoring of undeveloped primitive campsites, providing interpretive services, including dam tours, and assisting in wildlife habitat restoration activities.

CANNERY WORKER

Various companies and plants, Salem/Stayton/Brooks, Oregon, Summers of 1980-1986.

Jobs included raw product inspection, equipment sanitation, fork lift driver, product freezing tunnel operator, and general equipment trouble shooting. Products ranged from berries and cherry crops to corn, green beans, broccoli, and cauliflower crops.

PUBLICATIONS:

Anderson DM, VL Bailey, KA Cort, RJ Orth, and MJ Scott. 2008. "Biofuel Mandates and Mass Balance: Community-Level Socioeconomic and Land Use Impacts in the Pacific Northwest." Presented by David Anderson (Invited Poster) at Joint Genomics: GTL Awardee Workshop VI and Metabolic Engineering 2008, Bethesda, MD on February 11, 2008. PNNL-SA-59012.

Anderson DM, and JM Roop. 2007. "Book Review: The Technology-Energy-Environment-Health (TEEH) Chain in China: A Case Study of Cokemaking." *Journal of Regional Science* 47(2):397-398.

Anderson DM, and DB Elliott. 2006. "1996-2004 Trends in the Single-Family Housing Market: Spatial Analysis of the Residential Sector," PNNL-15925, Pacific Northwest National Laboratory, Richland, WA.

Anderson DM, and JM Roop. 2003. "The Role of Steel in the US Economy: Decomposing the 1982-1997 Forward and Backward Linkages of the Steel Industry." *Proceedings of the 2003 ACEEE Summer Study on Energy Efficiency in Industry*. ACEEE, Rye, NY.

Anderson DM, and DJ Hostick. 2003. "Post Hoc Evaluation of Long-Term Goals for Energy Savings in the Buildings Sector: Lessons from Hindsight." PNNL-14262, Pacific Northwest National Laboratory, Richland, WA.

Anderson DM, DB Belzer, KA Cort, JA Dirks, DB Elliott, DJ Hostick, and MJ Scott. 2003. "Methodological Framework for Analysis of GPRA Metrics: Application to FY04 Projects in BT and WIP." PNNL-14231, Pacific Northwest National Laboratory, Richland, WA.

Anderson DM. 2002. "FY 2000 Buildings Energy Savings Estimates under Uncertainty: Developing Approaches for Incorporating Risk into Buildings Program Energy Efficiency Estimates." PNNL-14075, Pacific Northwest National Laboratory, Richland, WA.

Anderson DM, Scott MJ, Bunn AL, Fowler RA, Prendergast EL, Miley TB and Eschbach TO. 2002. "2001 Columbia River Recreation Survey -- Implications for Hanford Site Integrated Assessment." PNNL-13840, Pacific Northwest National Laboratory, Richland, WA.

Anderson, D. M., 1997, "Practicing Responsible Tourism: International Case Studies in Tourism Planning and Development," a book review, *Journal of Regional Science* 37(2):373-374, 1997.

Anderson, D. M., T. L. Marsh, D.E. Deonigi, 1996, "Developing Food Production and Consumption Information for 131I Dose Estimation: The Hanford Experience," *Health Physics* 71(4):578-587, October 1996.

Anderson, D. M., P. Godoy-Kain, A. Y. Gu, C. A. Ulibarri, 1996, "Socioeconomic Effects of Power Marketing Alternatives for the Central Valley and Washoe Projects: 2005 Regional

Economic Impact Analysis Using IMPLAN," PNNL-11411, Pacific Northwest National Laboratory, Richland, Washington, November 1996.

Anderson, D. M., P. Godoy-Kain, A. Y. Gu, C. A. Ulibarri, 1996, Socioeconomic Effects of DRAFT Power Marketing Options for the Central Valley and Washoe Projects: 2005 Regional Economic Impact Analysis Using IMPLAN, PNNL-11135, Pacific Northwest National Laboratory, Richland, Washington, April 1996.

Anderson, D. M., 1995, Economic Impact of Selected Energy-Intensive Industries on the Economies of the United States, California, Georgia, Michigan, Ohio, and Texas. Invited presentation at the First Industrial Energy Efficiency Symposium and Exposition, Washington, DC, May 1-3, 1995; sponsored by the DOE Office of Industrial Technology.

Anderson, D. M., 1995, "Everyday Travel Through Cyberspace", *Inventor-Assistance Program News*, No. 39, February, 1995, pp. 5-10. A publication of the Department of Energy's States Inventors Initiative.

Anderson, D. M., T. L. Marsh, D.E. Deonigi, 1994, "Developing Food Production and Consumption Information for Use in Dose Estimation", PNWD-SA-3960 HEDR, Poster Session Presented at the Health Physics Society 39th Annual Meeting, San Francisco, California, June 26-30, 1994.

Anderson, D.M., and M. J. Scott, 1993, "Valuing the Salmon Resource: Columbia River Stocks Under Climate Change and Fisheries Enhancement", *Proceedings of the 27th Annual Pacific Northwest Regional Economic Conference*, pp. 83-88. Northwest Policy Center, University of Washington, Seattle, Washington.

Anderson, D.M., D.J. Bates, T.L. Marsh, 1993, "Estimation of 1945 to 1957 Food Consumption," PNWD-2113-HEDR, Battelle Pacific Northwest Division, Richland, Washington.

Anderson, D.M., S.A. Shankle, M.J. Scott, D.A. Neitzel, and J.C. Chatters, 1992, "Costs of Climate Change: Economic Value of the Yakima River Salmon", PNNL-SA-20998, Presented at the 67th Annual Conference of the Western Economics Association International, San Francisco, California, July, 1992.

Anderson, D.M., S.A. Shankle, M.J. Scott, D.A. Neitzel, and J.C. Chatters, 1993, "Costs of Climate Change: Economic Value of the Yakima River Salmon", *Contemporary Policy Issues*, XI:4, October 1993, pp. 82-94.

Anderson, D.M., 1992, "Methodology for Reconstruction Historical Food Consumption Estimates," PNNL-8123-HEDR, Battelle Pacific Northwest National Laboratory, Richland, Washington.

Anderson, David M., 1991, "Current and future economic impact of Mount Hood National Forest outdoor recreation consumption." Thesis (M.S.)--Oregon State University, 1992. OSU Valley Library: LD4330 1992 .A53.

Bailey VL, DM Anderson, and RS Butner. 2009. "Agricultural Considerations in Region Selection for Biofuel Economic Impact Modeling." Presented by Vanessa L. Bailey (Invited Poster) at GTL Contractor-Grantee Workshop VII USDA-DOE Plant Feedstock Genomics for Bioenergy Awardees' Workshop 2009, Bethesda, MD on February 9, 2009. PNNL-SA-64678.

Binn TM, and DM Anderson. 2010. "Enzymatic Bioprocessing of Lignocellulosic Biomass: the Impact of Process Design Variation and Genetic Manipulation towards a Future of Affordable Biofuels." PNNL-SA-74711, Pacific Northwest National Laboratory, Richland, WA. Submitted to the Journal of Undergraduate Research.

Bonneville Power Administration, 1992, "Yakima River Basin Fisheries Project Draft Environmental Impact Statement." DOE/BP-1899, (Socioeconomics preparer), Pacific Northwest National Laboratory, Richland, Washington, October, 1992.

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Chatters, J.C., V. Butler, M.J. Scott, D.M. Anderson, D.A. Neitzel, 1995, "A Paleoscience Approach to Estimating the Effects of Climatic Warming on the Salmonid Fisheries of the Columbia River Basin", *Climate Change & Northern Fish Populations*, Canadian Special Publication of Fisheries and Aquatic Sciences 121, pp. 489-496, R.J. Beamish, editor, National Research Council of Canada, Ottawa, Quebec.

Cort KA, DM Anderson, DB Belzer, JA Dirks, and DJ Hostick. 2006. "Technical Appendix: BT FY07 GPRA Documentation." *Projected Benefits of Federal Energy Efficiency and Renewable Energy Programs: FY 2007 Budget Request*. DOE-EERE, Washington, DC. PNNL-SA-48274

Cort KA, DM Anderson, DB Belzer, JA Dirks, and DJ Hostick. 2005. "Technical Appendix: GPRA FY06 Building Technologies Program Documentation." *Projected Benefits of Federal Energy Efficiency and Renewable Energy Programs FY 2006 - FY 2050*. DOE-EERE, Washington, DC.

Cort KA, DM Anderson, DB Belzer, JA Dirks, and DJ Hostick. 2004. "Technical Appendix: GPRA 05 Building Technologies Program Documentation." *External Report: EERE FY05 GPRA Documentation*. PNNL-SA-41706, Pacific Northwest National Laboratory, Richland, WA.

Deonigi, D.E., D.M. Anderson, G.L. Wilfert, 1994, "Commercial Milk Production and Marketing in the HEDR Region, 1944-1951," PNWD-2218-HEDR, Battelle Pacific Northwest Division, Richland, Washington.

Department of Energy, 1996, "Waste Isolation Pilot Plant Disposal Phase Draft Supplemental Environmental Impact Statement," DOE/EIS-0026, (Socioeconomics preparer), Carlsbad Area Office, Department of Energy, Carlsbad, New Mexico, November 1996.

Department of Energy, 1995, "Dual Axis Radiographic Hydrodynamic Test Facility Final Environmental Impact Statement," DOE/EIS-0228, (Socioeconomics preparer), Pacific Northwest National Laboratory, Richland, Washington, August, 1995.

Department of Energy, 1995, "Management of Spent Nuclear Fuel from the Hanford K-Basins Draft Environmental Impact Statement," DOE/EIS-0245D, (Socioeconomics preparer), Pacific Northwest National Laboratory, Richland, Washington, August, 1995.

Dirks JA, DM Anderson, DJ Hostick, DB Belzer, and KA Cort. 2008. "Lost Opportunities in the Buildings Sector: Energy-Efficiency Analysis and Results." PNNL-17623, Pacific Northwest National Laboratory, Richland, WA.

Dirks JA, DJ Hostick, KA Cort, DM Anderson, SC McDonald, and JP Dion. 2004. "Scenario-Based R&D Portfolio Analysis: Informing the Tough Decisions." Presented at ACEEE 2004 Summer Study in Buildings, Pacific Grove, CA on August 23, 2004. PNNL-SA-40057, Pacific Northwest National Laboratory, Richland, WA.

Elliott DB, DM Anderson, DB Belzer, KA Cort, JA Dirks, and DJ Hostick. 2004. "Methodological Framework for Analysis of Buildings-Related Programs: The GPRA Metrics Effort." PNNL-14697, Pacific Northwest National Laboratory, Richland, WA.

Elliott DB, DM Anderson, DB Belzer, KA Cort, JA Dirks, and DJ Hostick. 2004. "Baseline Inputs for BEAMS: Data used in preparing Methodological Framework for Analysis of Building-Related Programs: The GPRA Metrics Effort," June 2004 . PNNL-14696, Pacific Northwest National Laboratory, Richland, WA.

Fathelrahman EM, DM Anderson, and Kintner-Meyer. 2003. "Market Penetration of Competing New Technology: A Maximum Likelihood Estimation (MLE) Approach to Modeling the Emergence of the Electronic Ballast." *Proceedings of the 2003 International Energy Program Evaluation Conference*. IEPEC, Seattle, WA.

Hostick DJ, and DM Anderson. 2006. "Technical Appendix: WIP FY07 GPRA Documentation." *Projected Benefits of Federal Energy Efficiency and Renewable Energy Programs: FY 2007 Budget Request*. DOE-EERE, Washington, DC. PNNL-SA-48269

Hostick DJ, DM Anderson, DB Belzer, KA Cort, DE Deonigi, JA Dirks, NL Moore, and L Vimmerstedt. 2005. "Technical Appendix: WIP FY06 GPRA Documentation." *Projected Benefits of Federal Energy Efficiency and Renewable Energy Programs FY 2006 - FY 2050*. DOE-EERE, Washington, DC.

Hostick DJ, DM Anderson, DB Belzer, KA Cort, DE Deonigi, JA Dirks, NL Moore, and L Vimmerstedt. 2004. "Technical Appendix: WIP FY05 GPRA Documentation." *External Report: EERE FY05 GPRA Documentation*. PNNL-SA-41707, Pacific Northwest National Laboratory, Richland, WA.

Hostick DJ, KA Cort, DB Belzer, JA Dirks, DB Elliott, DM Anderson, and JP Dion. 2003. "Measurement and Baseline Issues Related to Evaluating a Diverse Portfolio of Federally-

Supported Building Energy-Saving Programs." *Proceedings of the 2003 International Energy Program Evaluation Conference*. IEPEC, Seattle, WA.

Johnson, R. L., D. Hospodarsky, and D. M. Anderson, 1989, "Economic Impact of Projected Outdoor Recreation Consumption on the Mount Hood National Forest," report prepared for the Mount Hood National Forest. Department of Forest Resources, Oregon State University, Corvallis, Oregon.

Kavanaugh, D.C., D.M. Anderson, T.L. Marsh, A.D. Lee, S. Onisko, 1994, "Key Elements Affecting Manufactured Home Household Investments in Energy-Efficiency: An Empirical Analysis." DOE/BP-2335, Bonneville Power Administration, March 1994, Portland, Oregon.

Kavanaugh, D.C., and D.M. Anderson, 1993, "Regional Analysis of Alternative Energy Paths", Working Paper presented at the 15th Annual Conference of the International Association for Energy Economics, October 11, 1993, Seattle, Washington.

Kavanaugh, D.C., D.M. Anderson, P.J. Barton, K.F. Gygi, C.D. McGee, W.H. Monroe, L.J. Sandahl, G.A. Wright, AES Corp., 1993, "A Simulation Model for Resource and Rate Impacts in the Western Area Power Administration Service Areas," PNNL-8721, Battelle Pacific Northwest National Laboratory, Richland, Washington.

Kavanaugh, D.C., D.M. Anderson, G.S. Sullivan, 1992, "Economic Analysis of the Camp Pendleton Lighting Retrofit Program," Report prepared for the Energy Systems Modernization Office, Pacific Northwest Laboratory, Richland, Washington.

Kavanaugh, D.C., R. Berrens, D.M. Anderson, K.R. Hughes, J.E. Englin, 1992, "Approaches and Plan for the Analysis of Recreation Participation and Valuation on Federal Hydroelectric Projects on the Columbia River System," Report prepared for U.S. Army Corps of Engineers, Bonneville Power Administration, and U.S. Bureau of Reclamation, by Battelle Portland, Portland, Oregon.

Kintner-Meyer M, Anderson DM and Hostick DJ. 2003. "Final Report for the Energy Efficient and Affordable Small Commercial and Residential Buildings Research Program -- Project 6.6 - Development of the Assessment Framework". PNNL-14343, Pacific Northwest National Laboratory, Richland, Washington.

La Riviere JS, DM Anderson, and VL Bailey. 2010. "Land Use Impacts of Second Generation Biofuel Mandates in the Pacific Northwest." Presented by Jacob La Riviere (Invited Poster) at 2010 Genomic Science Contractor-Grantee and Knowledgebase Workshop, Arlington, VA on February 8, 2010. PNNL-SA-70816.

Lester, M., and D.M. Anderson, 1995, "The Distribution of Minority and Low-Income Populations of the Western Sacramento Region (Western Area Power Administration)," BSRC-700/95/006, Battelle Seattle Research Center, Seattle, Washington.

Livingston OV, DM Anderson, and RS Butner. 2010. "CGE Approach to Estimating Employment, Income, and Revenue Impacts of Biofuel Mandates in Pacific Northwest Regions." Presented by Olga Livingston (Invited Poster) at 2010 Genomic Science Contractor-

Grantee and Knowledgebase Workshop , Arlington, VA on February 8, 2010. PNNL-SA-70745.

Marsh, T.L., D.M. Anderson, W.T. Farris, T.A. Ikenberry, B.A. Napier, G.L. Wilfert, 1992, "Commercial Production and Distribution of Fresh Fruits and Vegetables: A Scoping Study on the Importance of Produce Pathways to Dose," PNWD-2022-HEDR, Battelle Pacific Northwest National Laboratory, Richland, Washington.

Nuclear Regulatory Commission, 2010. "Draft Environmental Impact Statement for Combined Licenses (COLs) for Levy Nuclear Plant Units 1 and 2." NUREG-1941 (Need for Power, Benefit-Cost, and Transmission Lines preparer), Draft Report for Public Comment. Office of New Reactors, Washington, DC.

Nuclear Regulatory Commission, 2010. "Draft Environmental Impact Statement for Combined Licenses for Virgil C. Summer Nuclear Station Units 2 &3." NUREG-1939 (Socioeconomics , Environmental Justice, Benefit-Cost, and Land Use preparer), Draft Report for Public Comment. Office of New Reactors, Washington, DC.

Nuclear Regulatory Commission, 2006. "Environmental Impact Statement for an Early Site Permit Regarding the Grand Gulf Early Site Permit Site." NUREG-1817 (Land Use and Transmission Lines preparer), Draft & Final Report. Office of Nuclear Reactor Regulation, Washington, DC.

Nuclear Regulatory Commission, 2006. "Environmental Impact Statement for an Early Site Permit (ESP) at the Exelon ESP Site." NUREG-1815 (Land Use and Transmission Lines preparer), Draft & Final Report. Office of Nuclear Reactor Regulation, Washington, DC.

Nuclear Regulatory Commission, 2005. "Generic Environmental Impact Statement for License Renewal, Supplement 25; Regarding Brunswick Steam Electric Plant, Units 1 and 2." NUREG-1437 Supplement 25 (Socioeconomics and Environmental Justice preparer), Draft Report for Public Comment. Office of Nuclear Reactor Regulation, Washington, DC.

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Roop, J.M., D. M. Anderson, D. C. Baker, J. E. Dagle, M. T. Freund, C. A. Ulibarri, 1995, "Information Technology and Energy Security, PNNL Report prepared for Dept. of Energy," Office of Nuclear Nonproliferation, Battelle Pacific Northwest National Laboratory, Richland, Washington.

Roop, J.M., D. M. Anderson, R.W. Schultz, 1995, "SEADS-PC: Sectoral Energy/ Employment Analysis and Data System: Methodology, Capabilities, and an Example: Employment Impacts of the Climate Change Action Plan," PNNL-10760, prepared for Dept. of Energy, Office of

Economic Analysis and Competition, Pacific Northwest National Laboratory, Richland, Washington, September, 1995.

Schmidt LC, DM Anderson, BK Boyd, JE Cabe, and BW Russell. 2010. "Empowering Large-Scale Energy Efficiency as a Utility Generation Resource: Getting Appliance Loads Right." PNNL-SA-74563, Pacific Northwest National Laboratory, Richland, WA. Submitted to the Journal of Undergraduate Research.

Scott MJ, JM Roop, RW Schultz, DM Anderson, and KA Cort. 2008. "The Impact of DOE Building Technology Energy Efficiency Programs on U.S. Employment, Income, and Investment." *Energy Economics* 30(5):2283-2301.

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Scott MJ, DM Anderson, DB Belzer, KA Cort, JA Dirks, DB Elliott, and DJ Hostick. 2004. "Impact of the FY 2005 Building Technologies Program on United States Employment and Earned Income." PNNL-14813, Pacific Northwest National Laboratory, Richland, WA.

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