REBECCA CIEZ

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EDUCATION

Carnegie Mellon University, College of Engineering, Pittsburgh, PA
Ph.D. in Engineering and Public Policy, *Expected Spring 2018*
Thesis committee: Jay Whitacre (chair), Meagan Mauter, Jeremy Michalek, Constantine Samaras

Columbia University, School of Engineering and Applied Science, New York, NY
Bachelor of Sciences, Mechanical Engineering, May 2013
Economics & Sustainable Engineering Minors

RESEARCH EXPERIENCE

Carnegie Mellon University, Engineering and Public Policy, Pittsburgh, PA
Graduate Research Assistant 2013 – Present
Primary Advisor: Jay Whitacre
Constructed techno-economic assessment models of battery manufacturing costs, levelized cost of electricity in microgrids with electrochemical storage, and recycling pathways for batteries. Helped to develop and prototype concurrent assessment and design of systems framework for analyzing complex engineering systems with significant policy, economic, or social challenges.

Engineering for Change
Expert Fellow Summer 2017
Reviewed product research and user experience reports completed by three research fellows focusing on transportation, energy, and water products. Advised the research fellows on topics and structure of articles and sector overview reports.

ASME, Washington DC
Public Policy Research Intern Summer 2014
Conducted research related to US international energy policies, specifically related to the Power Africa Initiative. Research findings and recommendations were presented in writing and in presentations to representatives from engineering professional societies and Congressional fellows working on energy and technology issues.

Columbia University Water Center, New York, NY
Undergraduate Research Intern Fall 2012
Organized economic data to be interfaced with electricity and agricultural water use patterns of Punjab, India, in coordination with other researchers and interns to develop water and energy optimization models.

TEACHING EXPERIENCE

Carnegie Mellon University
Energy Policy and Economics Teaching Assistant Spring 2016, Spring 2017

- Update course materials to reflect recent energy and climate change policies
- Led course lectures and discussions of topics including energy for transportation and international climate negotiations
- Design and grade weekly essay and final exam questions for masters-level students

Materials for Energy Storage Teaching Assistant Spring 2016

- Assist in grading weekly assignments for masters-level students.

HONORS AND AWARDS

Carnegie Mellon GSA/Provost Office Graduate Small project Help Research Grant, 2017
Best Poster Award, Electrochemical Energy Symposium, 2016
NSF Graduate Research Fellowship, 2015
Neil and Jo Bushnell Fellowship, 2014
Friedman Fellowship, 2014
Columbia University King's Crown Civic Responsibility Award, 2013
Columbia University King's Crown Gold Crown Leadership Award, 2012

PROFESSIONAL EXPERIENCE

ASME, New York, NY
Engineering for Change (E4C) Intern Summer 2013

Disney/ABC Television, New York, NY
Facility Management Intern Summer – Fall 2012

Uncharted Play, New York, NY
Social Development Associate Spring 2012

Aerotech, Pittsburgh, PA
Mechanical Production Intern Summer 2011

LEADERSHIP/SERVICE

ASME
Nominating Committee Alternate Member June 2017 - Present
Vice President of Communications, Columbia University Fall 2012 – Spring 2013

Society of Women Engineers
WE Local Pittsburgh Conference Host Committee Chair Spring 2016 – Spring 2017
Pittsburgh Section Representative Summer 2016 – Summer 2017

Engineers Without Borders
Columbia University Uganda Program Manager 2013
Columbia University Chapter Treasurer 2011
Member *2009 – 2015*

Columbia University ADVANCE Leadership Program
Participant Spring 2012

PUBLICATIONS

Brian Sergi, Matthew Babcock, Nathaniel J. Williams, Jesse Thornburg, Aviva Loew, Rebecca E. Ciez, *Institutional Influence on Power Sector Investments: A Case Study of Distributed and Centralized Energy in Kenya and Tanzania,* under review.

Rebecca E. Ciez, Paul Welle, Meagan S. Mauter, J.F. Whitacre, *Concurrent assessment methodology for evaluating complex systems: a food-energy-water case study*, under review

Rebecca E. Ciez, J.F. Whitacre, *Comparison between cylindrical and prismatic li-ion cell costs using a process based cost model*, Journal of Power Sources **340**, 273-281 (2017)

Rebecca E. Ciez, J.F. Whitacre, *The cost of lithium is unlikely to upend the price of Li-ion storage systems*, Journal of Power Sources **320**, 310-313 (2016)

Rebecca E. Ciez, J.F. Whitacre, *Comparative techno-economic analysis of hybrid micro-grid systems utilizing different battery types*, Energy Conversion and Management **112**, 435-444 (2016)

CONFERENCE PRESENTATIONS

Evaluating food-energy-water systems with a concurrent assessment method. Energy Policy Research Conference. Santa Fe, NM, September 8-9, 2016.

Prospects for lithium ion battery recycling in a changing market. Energy Policy Research Conference. Santa Fe, NM, September 8-9, 2016.

Process-based cost modeling of cylindrical lithium-ion batteries. ASME Power & Energy Conference & Exhibition: Energy Storage Forum. Charlotte, NC, June 26-30, 2016.

How do different battery chemistries perform in a hybrid microgrid? ASME Power & Energy Conference & Exhibition: Energy Storage Forum. Charlotte, NC, June 26-30, 2016.

Energy Storage Optimization: A Techno-economic Analysis of Battery Chemistries in Hybrid Microgrids. USAEE/IAEE North American Conference, Pittsburgh, PA, October 27, 2015.

POSTER PRESENTATIONS

Analyzing Food-Energy-Water systems with a concurrent assessment method International Conference on Energy Research and Social Science, Sitges, Spain, April 2-5, 2017.

Lithium-ion battery costs: Can manufacturing economies of scale deliver cost goals? Carnegie Mellon Electrochemical Energy Symposium, Pittsburgh, PA, October 21, 2016.

Lithium-ion battery costs: Using process-based cost modeling to capture the manufacturing costs of recent battery trends. Carnegie Mellon Energy Week, Pittsburgh, PA, March 14-18, 2016.

Optimizing Energy Storage: A Techno-Economic Analysis for Hybrid Microgrid Systems. Center for Climate and Energy Decision Making Annual Meeting, Pittsburgh, PA, May 20-21, 2015.

Optimizing Energy Storage: A Techno-Economic Analysis for Hybrid Microgrid Systems. Engineering Sustainability: Innovation and the Triple Bottom Line, Pittsburgh, PA, April 20, 2015.

The (Not So) Little Engine That Could: Implementing Multifunction Energy Platforms in Uganda. National Sustainable Design Expo, Washington, DC, April 18-19, 2013.

OTHER PRESENTATIONS

Reducing BEV battery costs: contributions from manufacturing and recycling. UC Davis Sustainable Transportation Energy Pathways Seminar. June 20, 2017

Battery reuse and recycling in a changing energy storage market. Carnegie Mellon Electricity Industry Center Advisory Committee Meeting. October 26, 2016.

Policies Shaping Power Africa: Perspectives on Energy Policy for the Developed and Developing World. ASME Board on Government Relations. November 16, 2014.

Early Career Engineer Mini-Talks, Panel Moderator. ASME Board on Career Development, November 16, 2014.

The Techno-Economics of Distributed Hybrid Micro-grid Systems: Optimizing the Energy Storage Element. Carnegie Mellon Electricity Industry Center Advisory Committee Meeting. October 21, 2014.

Engineers Without Borders-USA Columbia University: Water Safety & Security. Guest Lecture: The Art of Engineering. November 16, 2012

Engineers Without Borders-USA Columbia University Uganda Program: Multifunction Energy Platforms. Guest Lecture: The Art of Engineering. March 30, 2012

Engineers Without Borders, Columbia Engineering Women's Forum. October 29, 2011.

Engineers Without Borders, Columbia Engineering Women's Forum. October 17, 2010.

MEDIA

IEEE Spectrum: 2017 Is the Make-or-Break Year for Tesla's Gigafactory, December 30, 2016.

Green Car Congress: CMU study suggests difficulties in reaching target low price points for Li-ion batteries, December 11, 2016.

Charged: New study: Lithium cost swings unlikely to impact battery prices, May 26, 2016.

Green Car Congress: CMU study concludes lithium market fluctuations unlikely to impact Li-ion battery prices significantly, May 5, 2016.

PROFESSIONAL ORGANIZATIONS

ASME
SWE
AAAS