



Transitioning from Fossil Fuel to Clean Energy

## Selected Decarbonization Reading List

This is the reading list that Clean Energy Transition Institute Board member Ross Macfarlane and Executive Director Eileen V. Quigley developed for a course they co-taught during the Winter Quarter 2018 at Western Washington University's Institute for Energy Studies. Readings and citations were current as of March 31, 2018.

The course, Northwest Energy Systems and the Low-Carbon Pathways, explored what is required to transition from a fossil fuel to clean energy system in the United States within a timeframe that avoids the worst impacts of global warming, with a focus on the Northwest region. We examined existing electricity, transportation, and building energy systems and the challenges and opportunities for transitioning them to low-carbon systems.

We began with a grounding in the complexity of the pathways to a low-carbon future; the barriers to transitioning; and the policies that enable the transition; then explored the clean energy transition in action internationally and nationally and examined how cities, counties, and states can make progress in transitioning off of fossil fuel in the absence of national leadership in the United States, using case studies from local Northwest efforts.

We investigated the impact of citizen advocacy that galvanizes action for carbon emission reduction (e.g., 100% Renewable campaigns; Power Past Coal; Stand Up to Oil; investment portfolio divestment, among others), as well as the importance of corporate leadership in carbon pollution reduction. We looked at the need to shape public opinion to demand the transition to clean energy and explored how to build a clean energy workforce and look at how to protect society's most vulnerable communities from bearing the brunt of the transition.

The core questions that this course explored were: what will it take to make the transition happen and can we get there without a radical transformation of our economy and political paradigms?

The main texts for the course were:

- [Our Renewable Future](#), Richard Heinberg and David Fridley, Post Carbon Institute, Island Press, 2016.
- [Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming](#), Paul Hawken, Penguin Books, 2017

R – Required reading    O – Optional reading

### **Class 1-1/9/18: Overview of Course and Expectations; Context Setting; Drives of the Transition**

O – Frame, Dave. September 18, 2017. The Conversation. [Keeping global warming to 1.5 degrees: really hard, but not impossible](#)

O – Plume, Brad and Nadja Popovich. November 6, 2017. *The New York Times*. [Here's How Far the World is From Meeting Its Climate Goals](#).

O – Roberts, David. June 18, 2012. Grist. [Climate Change is Simple: We Do Something or We're Screwed](#)

### **Class 2-1/11/18—Low-Carbon Pathways Introduction**

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Introduction, pp. 1-11
- R – “Near-Term Strategies for Achieving Greenhouse Gas Emissions Reduction in the Pacific Northwest: Lessons from Existing Literature and Models,” October 19, 2016. Energy + Environmental Economics
- R – Rockstrom, Johan, Owen Gaffney, Joeri Rogelj, Makta Meinshausen, Nebojsa Nakicenovic, Hans Joachim Schellnhuber. March 24, 2017. *Science*, Vol 355. Issue 6331. p. 1269-1271
- O – Horn, Heather. *The Atlantic*. December 18, 2015. [The Race to Remake the World's Energy](#)
- O – Hawken, Paul. 2017. **Drawdown**. Penguin Books. Chapter—Energy pp. 2-36, 222-225.
- O – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 1—A Quick at Our Current Energy System, pp. 13-34
- O – Kolbert, Elizabeth. November 20, 2017. *The New Yorker*. [Can Carbon-Dioxide Removal Save the World?](#)
- O – Romm, Joseph J. and Amory B. Lovins. Foreign Policy, 1992/Winter. [Fueling a Competitive Economy](#)

### **Class 3-1/16/18—Overarching Climate and Energy Policy**

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 9—What Government Can Do, pp. 161-173
- R – Roberts, David. October 10, 2017. Vox. [Friendly Policies Keep US Oil and Gas Afloat Far More than We Thought](#)
- R – Roberts, David. April 22, 2016. Vox. [Putting Price on Carbon is A Fine Idea: It's Not the End All Be All](#)
- R – Whibey, John. July 20, 2016. *Yale Climate Connections*. [Pros and Cons of Carbon Tax: Key Issues](#)
- R – Roberts, David. October 21, 2017. Vox. [The Most Effective Clean Energy Policy Gets the Least Love: In Defense of Renewable Energy Mandates.](#)
- R – Roberts, David. September 17, 2015. Vox. [How Inefficient Climate Policies Can Build Support for Efficient Ones.](#)
- R – Trancik, Jessica. March 29, 2014. *Nature*. [Back the Renewables Boom.](#)
- O – Galle, Jennifer and Nicholas Stern. November 20, 2017. *The Conversation*. [Setting the right price for carbon; five questions for Nicholas Stern.](#)
- O – Sightline. [Series: Carbon Pricing: An Introduction.](#)
- Roberts, David. April 26, 2016. Vox. [The Political Hurdles Facing a Carbon Tax and How to Overcome Them.](#)
- O – Pfund, Haley and Ben Healy. 2011. DBL Investors. [What Would Jefferson Do? The Historical Role of Subsidies in Shaping America's Energy Policy.](#)
- O – Redman, Nancy. October 3, 2017. *Price of Oil*. [Dirty Energy Dominance: Dependent on Denial – How the US Fossil Fuel Industry Depends on Subsidies and Climate Denial.](#)
- O – California Air Resource Board. January 20, 2017. [The 2017 Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target.](#)
- O – Meckling, Jonas, Nina Kelsey, Eric Biber, and John Zysman. September 11, 2015. *Science*. [Winning Coalitions for Climate Policy](#)
- O – Dews, Fred. May 4, 2016. *Brookings Now*. [10 Things You Should Know About the Carbon Tax.](#)

#### **Class 4-1/18/18—Northwest Energy Systems**

- R – Northwest Power and Conversation Council. [Place and Power: Evolution of the Northwest's System.](#)
- R – Northwest Power and Conversation Council. [Hydrothermal Power History.](#)
- O – Northwest Power and Conversation Council. [Pocket Guide to the NW Power and Conservation Council.](#)
- O – BPA Film Collection. [River of Power.](#) (video)
- O – Bonneville Power and Bureau of Reclamation. [Great River](#) (video)

#### **Class 5-1/23/18—Low-Carbon Pathways Electricity**

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 3—Renewable Electricity: Falling Costs, Variability, and Scaling Challenges p. 48-80
- R – Roberts, David. October 27, 2017. Vox. [The key to tackling climate change: electrify everything](#)
- R – Adams, Rod. November 21, 2017. The Energy Collective. [Consumers Win if Electricity Production Capacity Remains High](#)
- O – Johnson, Kirk. December 11, 2017. *The New York Times*. [Rethinking Electric Power, Prompted by Politics and Disaster.](#)
- O – Heerema, Dylan. Pembina three-part series on the Electrifying Path to Decarbonization. [Part 1 Electric heat pumps are key to low-carbon homes and buildings](#) January 4, 2018; [Part 2: Unleashing the benefits of electrification for utilities and customers](#) January 8, 2018; [Part 3: Electrification of buildings: A cornerstone of Canada's low-carbon future](#) January 10, 2018.
- O – [Op-ed battle](#) re: Columbia Generating Station between Brent Ridge, CFO of Energy Northwest and Robert McCullough. Oregon Live. August 3, 2016.

#### **Class 6-1/25/18—Low-Carbon Pathways-Electricity-Coal, Natural Gas & Nuclear (Macfarlane)**

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 7—What About ...? p. 131-141.
- R – Carbon Tracker Initiative. September 15, 2017. [No Country for Coal Gen.](#) (Executive Summary and Section 1).
- R – Roberts, David. October 19, 2017. Vox. [Four signs that Trump's furious efforts to save coal are futile.](#)
- R – Cardwell, Dianne. February 17, 2017. *The New York Times*. [The Murky Future of Nuclear Power in the United States.](#)
- R – Hirst, Neil. September 27, 2012. *The Guardian*. [Is Nuclear Power Necessary for Solving Climate Change?](#)
- R – Rissman, Jeremy and Robbie Orvis. May 3, 2017. *Forbes*. [Carbon Capture and Storage: An Expensive Option for Reducing US CO2 Emissions.](#)
- O – Hawken, Paul. 2016. ***Drawdown***. Chapters on Nuclear p. 18-23; Waste-to-Energy, p. 28-29
- O – Harvey, Hal. September 20, 2017. Energy Innovation. The Energy Collective. [Five Trends Renewable Energy Developers Can Tap to Grow Under Trump.](#)
- O – Romm, Joe. October 20, 2017. *Think Progress*. [Solar power crushes its own record for cheapest electricity 'ever, anywhere, by any technology'.](#)
- O – Pyper, Julia. November 8, 2017. *Greentech Media* [AEP Exec: The Future for Coal Power is 'Very Limited'.](#)
- O – Carbon Tracker Initiative. September 15, 2017. [No Country for Coal Gen.](#) (Full Report).

### Class 7-1/30/18-Low-Carbon Pathways-Transportation

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 4—Transportation: The Substitution Challenge p. 81-95
- R – Ghosh, Indradeep. May 23, 2016. CleanTechnica. [Fuel Switching: An Essential Step to a Decarbonized Future](#).
- R – Saxon, Steve and Matt Stone. November 1, 2017. McKinsey & Company. [How Container Shipping could reinvent itself for the digital age](#)
- R – Vinsel, Lee and Constantine Samaras. September 19, 2017. The Conversation. [Some of the best parts of autonomous vehicles are already here](#).
- R – Mims, Christopher. August 28, 2016. *Wall Street Journal*. [Why EVs will be here sooner than you think](#)
- O – Milman, Oliver. January 1, 2018. *The Guardian*. [Vehicles are now America's biggest CO2 source, but EPA is tearing up regulations](#).
- O – Williams, Eric. January 11, 2018. The Conversation. [Autonomous Vehicles help millions catch up on sleep and work](#).
- O – Soudi, Abdesalam. January 7, 2018. The Conversation. [Driverless cars might follow the rules of road but what about language of driving?](#)
- O – Barkenbus, Jack. January 3, 2018. The Conversation. [To get most out of self-driving cars, tap brakes on rollout](#)
- O – Erriquez, Mario, Thomas Morel, Pierre-Yves Mouliere, and Philip Schafer. October 2017. McKinsey & Company. [Trends in electric-vehicle design](#)
- O – Mitchell, Russ. June 16, 2017. *Los Angeles Times*. [Why electric buses juice California's economy? Start-up Proterra thinks so](#).
- O – Conca, James. March 23, 2017. Forbes. [Charged Up: Electric Cars Are Morphing into Many Species](#).
- O – Cheung, Albert. July 31, 2017. Bloomberg New Energy Finance. [The EV Bandwagon is Accelerating, but is it unstoppable?](#)
- O – July 14, 2017. Bloomberg New Energy Finance. [Big Oil Just Woke Up to Threat of Rising Electric Car Demand](#)

### Class 8-2/1/18—Low-Carbon Pathways-Transportation- Aviation, Freight, & Marine

- R – Berg, Nate. January 5, 2016. *GreenBiz*. [The Future of Freight: More Shipping, Less Emissions?](#)
- R – Clauber, Adam and Isaac Toussie. October 19, 2017. *GreenBiz*. [Why the Time Is Right for Aviation Biofuels to Take Off](#).
- R – Pyper, Julia. November 16, 2017. GreenTech Media. [Why Tesla's Electric Truck is the Toughest Thing Elon Musk Has Attempted Yet](#).
- R – Ghosh, Indradeep. May 23, 2016. CleanTechnica. [Fuel Switching: An Essential Step Toward A Decarbonized Future](#)
- O – Hawken, Paul. 2016. ***Drawdown***. Chapters on Ships, p. 140-141, Airplanes, 150-151, Trucks, 152-153, Trains, 156.
- O – Zuckerman, Seth. 2015. Climate Solutions. [Toward Sustainable Aviation Fuels: A Primer and State of the Industry](#).
- O – Climate Solutions et al., May 25, 2011. [Sustainable Aviation Fuels Northwest](#).
- O – Rocky Mountain Institute – Carbon War Room and SkyNRG. July 2017. [Innovative Funding for Sustainable Aviation Fuel at US Airports: Explored at SeaTac International](#).
- O – Natural Resources Defense Council. January 2015. Issue Brief: [National Freight Pathways](#).

O – Rocky Mountain Institute/UMAS. February 20, 2017. [Navigating Decarbonization](#).

### **Class 9-2/6/18—Policy-Transportation**

R – Roberts, David. Vox. August 22, 2017. [California Has a Climate Problem and Its Name is Cars](#)

R – ICF International/Union of Concerned Scientists. 2016. [Half the Oil: Pathways to Reduce Petroleum Dependence on the West Coast](#) (Executive Summary and Chapter 5 (Washington)).

R – Mansell, Anthony. October 6, 2016. Center for Climate and Energy Solutions. [A New Flight Path for Reducing Emissions from Global Aviation](#).

O – ICF International/Union of Concerned Scientists. 2016. [Half the Oil: Pathways to Reduce Petroleum Dependence on the West Coast](#) (remainder of report).

### **Class 10-2/8/18—Decarbonization in Action**

R – Bryce, Emma. September 22, 2017. Climate Reality. [German's Transition from Coal to Renewable Energy](#)

R – Mathews, John. October 10, 2017. The Energy Collective. [The Spectacular Success of Energiewende and What Need to be Done](#)

R – Evans, Simon. January 3, 2018. Carbon Brief. [Analysis: Low-carbon sources generated more UK electricity than fossil fuels in 2017](#).

R – Russell, Ruby, Julian Wettengel, August 4, 2017, Clean Energy Wire, [Germany's Energiewende: The Easy Guide, Find your way around the energy transition](#)

R – Reed, Stanley, December 25, 2017, *The New York Times*. [Power Prices Go Negative in Germany, A positive for Energy Users](#)

R – Rogers, John, January 29, 2018. Union of Concerned Scientists. [Clean Energy Leadership: Next Steps for Massachusetts](#)

R – Cuomo, Andrew M., January 2, 2018. [Governor Cuomo Unveils 20<sup>th</sup> Proposal of 2018 State of the State: New York's Clean Energy Jobs and Climate Agenda](#)

R – Leon, Warren, July 26, 2016. [Clean Energy States Alliance. State Leadership in Clean Energy: Award-Winning Programs in California and New York](#)

R – Tabuch, Hiroko, September 27, 2017. *The New York Times*. [U.S. Climate Change Policy: Made in California](#)

R – Caughill, Patrick, January 16, 2018. Futurism. [China is the New World Leader in Renewable Energy](#)

R – Chiu, Domonic, Center for October 6, 2017. Center for Strategic and International Studies, New Perspectives in Foreign Policy, Volume 13, Summer 2017. [The East is Green: China's Global Leadership in Renewable Energy](#)

R – Pham, Sherissa and Matt Rivers, July 18, 2017, CNN Tech [China is crushing the U.S. in Energy](#)

R – Bradsher, Keith, June 6, 2017, *The New York Times*. [China Looks to Capitalize on Clean Energy as U.S. Retreats](#)

O – Zinglensen, Christian, June 4, 2017, International Energy Agenda. [A New Era of Shares Clean-Energy Leadership Begins in China](#)

O – Sandbag, June 7, 2017, *The Guardian*. [What is the emissions trading scheme and does it work?](#)

O – Huber, Bridget, January 10, 2018. *The Washington Post*. [California proves Trump wrong](#)

O – Hellerstein, Ben, March 13, 2014. Environment Massachusetts. [Massachusetts' Clean Energy Leadership has Significantly Reduced Carbon Emissions](#)

O – Gardiner, Bet, May 12, 2017. National Geographic. [Three Reasons to Believe China's Renewable Energy Boom](#)

### **Class 11-2/13/18—Washington Policy Update—Accelerating Paths to Clean Energy**

- R - Gutman-Britten, Vlad. February 1, 2018. Climate Solutions Blog. [Fossil-Free Forward!](#)
- R – Washington State Senate, February 5, 2018. Washington State Legislative Site. [Senate Bill Report: SB 6253.](#)
- R - Le, Phuong. January 23, 2018. The News Tribune. [Washington State Panel Oks Low Carbon Fuels Standard.](#)
- R – Washington State House of Representatives, Committee Report. January, 2018. Washington State Legislative Site. [House Bill Report: HB 2338.](#)
- R – Bernton, Hal and Joseph O’Sullivan. February 2, 2018. Seattle Times. [Washington State \\$10 a Ton Carbon Tax Proposal Takes Key Step in Legislature.](#)
- R – Alliance for Jobs and Clean Energy. Current. Alliance Web Site. [Our Policy Proposal](#) (Read Proposal and FAQ).
- R – Washington State Senate, January 14, 2018. Washington State Legislative Site. [Senate Bill Report: SB 6203.](#)
- O – Washington State Senate, February 2, 2018. Washington Legislative Site. [Substitute Senate Bill 6203.](#)
- O - Life Cycle Associates, et al. December 12, 2014. [Washington State Office of Financial Management. A Clean Fuel Standard in Washington State: A Revised Analysis with Updated.](#)
- O – Washington State House of Representatives. January 26, 2018. Washington State Legislative Site. [Substitute House Bill 2338.](#)
- O – Roland-Horst, David. 2015. Next 10. [California Climate Policy to 2050.](#)
- O – Washington State Carbon Emissions Reductions Task Force. 2015. [CERT Final Report](#)
- O – Carlyle, Reuven. December 31, 2017. Personal Blog. [Carbon Pricing and Energy Investment: A Time for Representative Democracy.](#)
- O - Ranker, Senator Kevin. January 4, 2018. Senate Democrats Blog. [Ranker: We Can Fight Climate Change and Washington Can Lead the Charge.](#)
- O – Roberts, David. April 26, 2016. Vox. [The Political Hurdles Facing a Carbon Tax and How to Overcome Them.](#)

### **Class 12-2/15/18—City-Led Climate and Clean Energy Action**

- R – Quigley, Eileen V. October 6, 2017. Clean Energy Transition. [Cities Take Aim at Carbon Reduction](#)
- R – Quigley, Eileen V. November 8, 2017. Clean Energy Transition. [Mapping a City’s Energy Sources and Uses](#)
- R – Quigley, Eileen V. December 6, 2017. Clean Energy Transition. [Carving Up Carbon Reduction Strategies](#)
- R – Mazur, Laurie. June 29, 2017. Clean Energy Transition. [Cities’ Path to 100% Clean, Renewable Energy.](#) Meister Consultants Group. [Pathways to 100: An Energy Supply Transportation Primer for U.S. Cities.](#) pp. 4-8.
- R – Jones, Nathanael. January 19, 2018. Grist. [Lessons from Boulder’s bad breakup](#)
- R – Milman, Oliver, Joe Eskenazi, Richard Luscombe, Tom Dart. June 12, 2017. *The Guardian*. [The fight against climate change: four cities leading the way in the Trump era](#)
- R – November 2017. McKinsey. [A strategic approach to climate action in cities—focused acceleration](#)
- R – June 2017. McKinsey. [The future\(s\) of mobility: How cities can benefit](#)
- R – Barber, Benjamin. June 2016. McKinsey. [The power of collective action: Forging a global role for mayors](#)



R – Labrador, David. June 5, 2017. RMI Outlet [Unlocking the High Value of Clean Energy in Low-Income Communities](#).

Organizations to review: [Sierra Club's Ready for 100](#); [Urban Sustainability Directors Network](#) (USDN); [C40 Cities Climate Leadership Group](#); [Innovation for Network Communities](#); [Renewable Cities: America's Pledge](#) (WRI)

O – Broekhoff, Derik, Peter Erickson, Carrie M. Lee. November 2015. [Stockholm Environment Institute. What cities do best: Piecing together an efficient global climate governance](#)

O – Rocky Mountain Institute. November 11, 2017. [The Carbon-Fee City Handbook](#).

O – Georgetown Climate Center. January 19, 2017 [Lessons in Regional Resilience](#) and [report](#)

O – Willmott, Elizabeth. November 2015. [The Urban Clean Energy Revolution](#)

O – Quigley, Eileen V. and Elizabeth Willmott. July 2012 [Powering the New Energy Future from the Ground Up: Profiles in City-Led Clean Energy Innovation](#)

O – Hayden, Bobby. October 3, 2011. Climate Solutions. [RePower Bainbridge](#).

### **Class 13-2/20/18—Advocacy-Supply Side**

R – Carbon Tracker/PRI. June 21, 2017. [2 Degrees of Separation: Transition Risks for Oil and Gas in a Low Carbon World](#). (Executive Summary)

R – McKibben, Bill. July 19, 2012. *Rolling Stone*. [Global Warming's Terrifying New Math](#).

R – Lazarus, Michael, Erickson, Peter, and Tempest, Kevin. October 2015. Stockholm Environment Association. [Supply-Side Climate Policy: The Road Less Taken](#).

R – Macfarlane, Ross. April 7, 2017. Power Past Coal Blog. [Halting the Runaway Coal Export Train](#).

R – Stavins, Robert. March 20, 2014. Yale Environment 360. [Divestment Is No Substitute for Real Action on Climate Change](#).

O – Davenport, Coral. January 8, 2015. New York Times. [Experts Say That Battle Over Keystone XL Pipeline Is Over Politics, Not Facts](#).

O – Carbon Tracker/PRI. June 21, 2017. [2 Degrees of Separation: Transition Risks for Oil and Gas in a Low Carbon World](#). (Full Report)

O – Kartha, Sivan, Michael Lazarus, and Kevin Tempest. 2016. Stockholm Environment Institute. [Fossil fuel production in a 2°C world: The equity implications of a diminishing carbon budget](#).

O – Weber, Olaf, Turzaar Doordi, and Vasundhara Saravade. December 10, 2017. *The Conversation*. [How Divesting of Fossil Fuels Could Help Save the Planet](#).

O – Brown, Dylan. October 12, 2017. E & E News. [Bloomberg puts another \\$64m for the 'war on coal'](#)

O – Milman, Oliver. November 20, 2017. The Guardian. [EA civil rights 'emergency': justice, clean air and water in the age of Trump](#)

O – Zacher, Sam. August 11, 2017. The Anthropocene, [U.S. House's Climate Solutions Caucus: Lessons on the Politics of Climate Change](#)

### **Class 14-2/22/18—Advocacy-Movement Building and Influencing Public Opinion**

#### **Communications:**

R – Hymas, Lisa. December 7, 2017. *The Guardian*. [Climate change is the story you missed in 2017 and the media is to blame](#)

R – Fahey, Anna. May 6, 2015. Sightline. [3 Climate Messages that Win](#)

- O – Blanding, Michael. August 28, 2017. Niemen Reports. [Covering Climate Change, with Urgency and Creativity](#)
- O – Momentum. December 2013. [Communicating on Climate: 13 Steps and Guiding Principles](#)
- O – Grandoni, Dino. January 23, 2018. *The Washington Post's PowerPost*. [The Energy 202: Republicans love NASA. But why do they doubt its climate science?](#)

#### **Public Opinion:**

- R – Leiserowitz, Anthony. Edward Maibach, Connie Roser-Renouf, Seth Rosenthal, Matthew Cutler, John Kotcher. November 16, 2017. Yale Program on Climate Change Communications [More than Six in Ten American are Worried about Global Warming](#) and [Yale Climate Opinion Maps-U.S. 2016](#)
- R – Quealy, Kevin. November 14, 2017. The Upshot. *The New York Times*. [“The More Education Republicans have, the Less They Tend to Believe in Climate Change”](#).
- R – Lifton, Robert Jay. October 7, 2017. *The New York Times*. [Our Changing Climate Mind-set](#)
- R – Nuccitelli, Dana. November 29, 2017. *The Guardian*. [Battered by extreme weather, Americans are more worried about climate change.](#)
- O – PollingReport.com. September 2017. [Polling on Climate Change and Americans](#)

#### **Anti-Fossil Fuel Protests**

- R – Roberts, David. November 17, 2017. Vox. [The McKibben effect: a case study in how radical environmentalism can work](#)
- R – Piggot, Georgia. May 4, 2017. Climate Strategies Blog. [Will Social Movements Focused on Fossil Fuel Supply Help Solve the Climate Crisis?](#) Paper is at [Climate Policy](#).
- R – McKibben, Bill. January 18, 2018. *The Nation*. [The Resistance to Trump Will be Local](#)
- O – McKibben, Bill. February 1, 2018. *The Guardian*. [We can battle climate change without Washington, DC. Here's how.](#)
- O – Wong, Julia Carrie. February 23, 2017. *The Guardian*. [Police remove last Standing Rock protesters in military-style takeover](#)
- O – Adler, Ben, January 18, 2017. Grist. [In the Trump era, all climate progress will be local](#)
- O – Hales, Charlie, Bill McKibben. October 22, 2016. OregonLive. [Portland and other cities lead on climate change](#)

#### **Divestment:**

- R – McKibben, Bill December 21, 2017. *The New Yorker*. [The movement to divest from fossil fuels gains momentum](#)
- O – Reuters Staff. December 19, 2017. Reuters. [NY City Comptroller proposes pension funds to cut fossil fuel portfolio](#)
- O – Reisman, Nick. December 19, 2017. State of Politics. [Cuomo Wants to End Fossil Fuel Investment by Pension Fund](#)
- O – [Go Fossil Free](#)

#### **Class 15-2/27/18—100% Clean Movement**

- R – Roberts, David. February 6, 2018. Vox. [A beginners' guide to the debate over 100% renewable energy](#)
- R – Roberts, David. May 3, 2016. Vox. [Here is what it would take for the US to run on 100% renewable energy.](#)
- R – Shahan, Zachary. February 23, 2013. CleanTechnica. [How much can/should the world be powered by renewable energy.](#)



R – Fell, Hans-Josef. September 28, 2017. CleanTechnica. [Accelerating the global transition to 100% renewable energy.](#)

R – Barton, Charles. February 23, 2010. [Mark Z. Jacobsen is credible as a scientist?](#)

R – Initiatives explicitly about carbon neutrality or 100% renewable energy: [Carbon Neutral Cities Alliance](#); [Global 100% RE](#); [Go 100%](#); [Renewables 100](#); [The Solutions Project](#); [Renewable Cities](#); Sierra Club [Ready for 100](#); [Sierra Club 100% Clean Energy](#).

O – Horn, Heather. December 8, 2015. *The Atlantic* [The Race to Remake the World's Energy](#)

O – November 8, 2017. EnergyWatchGroup. [New Study: 100% Renewable Electricity Worldwide is Feasible and more Cost-effective than the Existing System](#); [Go 100 Renewable Campus](#)

If you want to read all of David Roberts' pieces on this topic (optional):

Roberts, David. April 18, 2016. Vox. [How cheap does solar power need to get before it takes over the world?](#)

Roberts, David. February 12, 2016, Vox. [Flattening the “duck curve” to get more renewable energy on the grid](#)

Roberts, David. June 24, 2015. Vox. [The economic limitations of wind and solar power](#)

Roberts, David. June 19, 2015. Vox. [Why wind and solar power are such a challenge for energy grids](#)

Roberts, David. May 29, 2013. Grist, [What's threatening utilities: Innovation at the edge of the grid \(with dik-diks!\)](#)

Shahan, Zachary. February 19, 2013. CleanTechnica. [70%, 80%, 99.9%, 100% Renewables—Study Central](#),

Tucker, William. September 17, 2015. RealClearEnergy. [Is Mark Jacobson the New Amory Lovins?](#) [http://www.youtube.com/watch?v=m1NNZZ2Y\\_nQ&feature=youtu.be](http://www.youtube.com/watch?v=m1NNZZ2Y_nQ&feature=youtu.be)

### **Class 16-3/1/18—Business Community Leadership**

R – Holder, Michael. December 13, 2017. *GreenBiz*. [Influential Investors Urge 100 Companies to Step Up Climate Action.](#)

R – We Mean Business Coalition. December 12, 2017. [Business Is Harnessing the Paris Coalition As a Driver of Growth.](#)

R – Toffler, Michael and Auden Schendler. September 15, 2017. *Network for Business Sustainability*. [Greening is Not Enough: 4 Steps to Corporate Leadership on Climate Change.](#)

R – Wentzell, Scott. April 12, 2017. *Forbes*. [Corporate Climate Leadership in the Age of Trump.](#)

R – Wright, Christopher and Daniel Nyberg. November 22, 2017. *Harvard Business Review*. [How Bold Corporate Climate Change Goals Deteriorate Over Time.](#)

R – Klein, Naomi. November 9, 2011. *The Nation*. [Capitalism vs. Climate.](#)

O – Carbon Disclosure Project/We Mean Business. August 2017. [The Business End of Climate Change.](#)

O – Kuramochi, Takeshi *et al.* September 2017. New Climate Institute/ The Climate Group. [States, Cities and Businesses Leading the Way: A First Look At Decentralized Climate Commitments in the US.](#)

O – Schendler, Auden. August 1, 2016. *Huff Post*. [On Climate, Corporations Need to Grow a Soul.](#)

### **Class 17-3/6/18—Building a Clean Energy Workforce**

R – Rushe, Dominic. *The Guardian*. December 31, 2017. [Trump job promise, trouble lies ahead](#)

R – Huber, Bridget. *The Washington Post*. January 10, 2018. [California proves Trump wrong.](#)

- R – Friedrich, Kat. June 6, 2017. Yale Clean Energy Finance Forum. [Nine Cities Build On-Ramps for the Clean Energy Workforce](#)
- R – Raudys, Leo. GreenBiz. March 8, 2017. [Why coal country must be part of the clean economy](#)
- R – Raudys, Leo. GreenBiz. February 23, 2018. [The great coal cleanup is everybody's business \(with opportunity for all\)](#)
- R - Varinsky, Dana. Business Insider. January 26, 2017. [Solar energy jobs are growing 12 times as fast as the US economy](#)
- R – Rushe, Dominic. *The Guardian*. October 10, 2017. [The End of the Road: Will automation put an end to the American trucker?](#)
- R – Rubin, Robert E. *The New York Times* November 8, 2017. [Why the U.S. Needs a Federal Jobs Program, Not Payouts.](#)
- R – Cauley, Kashana. *The New York Times*. July 13, 2017. [Why Millennials Should Lead the Next Labor Movement](#)
- R – Advanced Energy Economy, February 21, 2017. [Over 3 Million in U.S. Now Work in Clean Energy.](#)
- R – Advanced Energy Economy, March 6, 2017. [Advanced Energy is \\$200 Billion U.S. Industry, Equal to Pharmaceutical Manufacturing, approaching Wholesale Consumer Electronics](#)
- O – James, Betony & Kevin Duncan. UC Berkeley Center for Labor Research and Education. [The Economic Impacts of California's Major Climate Programs on the San Joaquin Valley](#)

#### **Class 18-3/8/18—Barriers to the Transition**

- R – Supran, Geoffrey and Naomi Oreskes. August 22, 2017. *The New York Times*. [What Exxon Mobil Didn't Say About Climate Change.](#)
- R – Banerjee, Neela. December 22, 2017. *Inside Climate News*. [How Big Oil Lost Control of Its Climate Misinformation Machine.](#)
- R – Carpenter, Zoe. November 10, 2016. *The Nation*. [Is This Game Over for the Climate?](#)
- R – Steffen, Alex. April 22, 2015. *World Changing*. [On Earth Day.](#)
- R – Golden, KC. May 22, 2015. *Climate Solutions*. [We Have Met the Wrong Enemy.](#)
- R – Green, Emily. October 13, 2017. *Psychology Today*. [The Existential Dread of Climate Change.](#)
- R – Leibrich, Michael. September 27, 2017. *Bloomberg New Energy Finance*. [In Energy and Transportation Stick It to the Orthodoxy.](#) <https://about.bnef.com/blog/energy-transportation-stick-orthodoxy/>
- O – Center for International Environmental Law. November 2017. [Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis.](#)
- O – Oreskes, Naomi and Erik Conway. 2010. Bloomsbury Press. [Merchants of Doubt \(Chapter 6: The Denial of Global Warming\).](#)

#### **Class 19-3/13/18—What will it take to create an economy-wide low-carbon pathways approach for the Northwest?**

- R – Haley, Ben; Gabe Kwok; Ryan Jones; Jim Williams. April 2017. [Deep Decarbonization Pathways Analysis for Washington State: Executive Summary.](#)
- R – Energy Northwest. January 2, 2018. [Reducing carbon emissions at the lowest cost.](#)
- R – Sickinger, Ted February 17, 2018. *Oregon Business Review*. [PGE study: low-carbon grid is doable, affordable.](#)
- R – Bloomberg, Michael R.; Henry M. Paulson, Jr.; Thomas F. Steyer. Risky Business Project. 2016. [From Risk to Return: Investing in a Clean Energy Economy.](#)

- – Mahone, Amber; Elaine hart; Ben Haley; Jim Williams; Sam Borgeson; Nancy Ryan; Snuller Price. Energy + Environmental Economics. April 6, 2015. [California PATHWAYS: GHG Scenario Results](#).
- – Evolved Energy Research April 2017. Deep Decarbonization Pathways Analysis for Washington State (PDF uploaded to Canvas)
- – Energy +Environmental Economics. December 15, 2017. Greenhouse Gas Reduction Study for Public Generating Pool. (PDF uploaded to Canvas)
- – Evolved Energy Research. February 7, 2018. Decarbonization Study for Portland General Electric Integrated Resource Plan (Draft). Uploaded to Canvas.

#### **Class 20-3/15/18—Wrap-Up: What’s needed**

- R – Heinberg, Richard and David Fridley. 2016. ***Our Renewable Future***. Post Carbon Institute, Island Press, Chapter 11—What We Learned pp. 181-199
- R – Grunwald, Michael. March/April 2018. Politico Magazine. [My Life in the Elusive Green Economy: Our Renewable Future is Here, If You Can Find a Plug](#).
- R – Bernton, Hal. March 5, 2018. Seattle Times. [Winds of Change: What Will Power the Northwest’s Future?](#)

#### **Additional References**

- Smith, Zadie. April 3, 2014. *The New York Review of Books*. [Elegy for a Country’s Seasons](#).
- Liebrich, Michael, September 17, 2017. Bloomberg New Energy Finance. [The 2017 State of the Industry Summit](#)

#### **Animations & Videos**

- [Animated Keeling Curve](#)
- [1,000 Years of Carbon Emissions](#)
- [800,000 Years of CO<sub>2</sub> Levels](#)
- [Sprial-tastic: Climate Change in three animations](#)
- [Nissan Leaf Gas-Powered Everything](#)
- [Big Oil is desperate for your love. Watch their silly plea in this insane video](#)

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