

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * * *

RE: IN THE MATTER OF THE)
APPLICATION OF PUBLIC SERVICE)
COMPANY OF COLORADO FOR) PROCEEDING NO. 16A-0396E
APPROVAL OF ITS 2016 ELECTRIC)
RESOURCE PLAN)

ANSWER TESTIMONY OF AUDEN SCHENDLER

ON
BEHALF OF
ASPEN SKIING COMPANY, INC., PROTECT OUR WINTERS,
AND INTRAWEST RESORT HOLDINGS, INC.

January 10, 2018

TABLE OF CONTENTS

I.	INTRODUCTION	3
II.	IMPACTS OF CLIMATE CHANGE	7
III.	WORTH PROTECTING	15
	STATEMENT OF QUALIFICATIONS	19

1 I. **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

3 A. My name is Auden Schendler. I am Senior Vice President of Sustainability and
4 Community Engagement at Aspen Skiing Company, Inc., 117 Aspen Airport
5 Business Center, Aspen, CO 81612.

6 **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
7 **PROFESSIONAL EXPERIENCE.**

8 A. At Aspen Skiing Company, I work on large-scale, bipartisan solutions to climate
9 change at the policy and clean energy level. I'm also responsible for reducing the
10 environmental impact of the resort as a whole, and for our engagement with the
11 community. Aspen Skiing Company is regularly involved in energy policy issues,
12 and I have testified both to the U.S. Congress and to the state legislature in
13 Colorado. Beyond my policy work, I have been part of teams that have
14 developed pioneering, collaborative clean energy projects, including a micro-
15 hydroelectric plant that ties into the snowmaking system at Snowmass; one of
16 the first utility scale solar arrays in Western Colorado that was built in partnership
17 with a high school; and a waste methane-to-electricity plant at a western slope
18 coal mine that generates 3 MW of baseload power and is the only plant of its kind
19 in the U.S. I was previously a research associate in corporate sustainability at
20 Rocky Mountain Institute, a think tank that researches and promotes renewable
21 energy and energy efficiency. I am the author of many articles on clean energy in
22 peer-reviewed publications, and in 2009 I published a book titled *Getting Green*
23 *Done: Hard Truths from the Front Lines of the Sustainability Revolution.* I

1 received a BA in Biology and Environmental Studies from Bowdoin College. A
2 Statement of Qualifications with further detail is attached at the end of my
3 Answer Testimony.

4 **Q. ON WHOSE BEHALF ARE YOU FILING THIS ANSWER TESTIMONY?**

5 A. I am filing this Answer Testimony on behalf of the ski resorts Aspen Skiing
6 Company (ASC) and Intrawest Resort Holdings, Inc. (Intrawest), and the
7 nonprofit group Protect Our Winters (POW).

8 **Q. PLEASE BRIEFLY DESCRIBE EACH OF THE JOINT RESPONDENTS.**

9 A. ASC is a four-season resort that operates and owns four ski mountains in the
10 Aspen Snowmass area (Snowmass, Aspen Mountain, Aspen Highlands and
11 Buttermilk), the Ski and Snowboard Schools of Aspen Snowmass, the Limelight
12 Aspen and Little Nell hotels, as well as retail shopping and food services,
13 including 18 restaurants. ASC employs 4,000 people in winter and hosts 1.4
14 million skiers annually on 5,000 skiable acres.

15 Colorado-based POW, a 501(c)(3) non-profit, is a passionate coalition of
16 professional athletes and industry brands mobilizing the outdoor sports
17 community in support of state and federal climate policy. POW works on
18 educational initiatives, political advocacy and community-based activism, giving a
19 national climate voice to outdoor sports, an industry that supports 7.6 million jobs
20 and creates \$887 billion in economic revenue.¹ POW's policy agenda focuses on
21 mitigating greenhouse gas emissions. POW has testified to the Bipartisan
22 Congressional Climate Solutions Caucus, run campaigns around state-based

¹ <https://outdoorindustry.org/resource/2017-outdoor-recreation-economy-report/> (April 25, 2017)

1 climate issues, and will soon publish a second edition of its report on the
2 economic impacts of low snow years on mountain communities.

3 Intrawest owns and operates thirteen North American ski resorts, including
4 Steamboat, Mammoth, Deer Valley and Stratton Resorts, among others, with
5 more than seven million skier visits, with approximately 13,500 employees,
6 22,000 skiable acres and significant land available for real estate development.
7 Annual revenues are over \$1.1 billion. Intrawest also owns one of the first and
8 largest heli-skiing adventure operators in the world, and has a resort real estate
9 development division. Intrawest operates two resorts in Colorado (Steamboat
10 and Winter Park) and is headquartered in Denver.

11 **Q. WHY IS EACH OF THE JOINT RESPONDENTS INTERESTED IN THIS**
12 **PROCEEDING?**

13 A. The three entities have common concerns related to this proceeding. 1) We
14 believe increased clean electricity in Colorado ensures stable and affordable
15 energy for our businesses and customers. 2) We consider climate change to be a
16 material threat to our businesses and the Colorado economy, and believe state
17 leadership can lead to national and even global adoption of similar policy that will
18 lead to a decline in global emissions. 3) Consumers increasingly demand clean
19 energy for themselves and for the businesses they patronize. It is difficult for our
20 businesses to meaningfully increase clean energy supply, but the proposed
21 Colorado Energy Plan Portfolio (CEPP) in this 2016 Electric Resource Plan
22 proceeding does so in a sensible, real and cost-effective way.

1 **Q. WHAT IS THE PURPOSE OF YOUR ANSWER TESTIMONY?**

2 A. The goal of my testimony is to make a strong case for the consideration of the
3 CEPP by the Commission, and for the CEPP's eventual approval.

4 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.**

5 A. We urge the Public Utilities Commission to allow consideration of the CEPP, and
6 we support ultimate approval and adoption of the plan.

1 **II. IMPACTS OF CLIMATE CHANGE**

2 **Q. WHY IS CLIMATE CHANGE RELEVANT TO THE COMMISSION'S**
3 **CONSIDERATION OF THE CEPP?**

4 A. The impact of a warming planet is of great concern to ASC, POW and Intrawest.
5 Warming threatens Colorado's recreation economy and means snow-based
6 businesses are harder and more expensive to operate. Last spring, for example,
7 Aspen hosted the World Cup ski racing finals in March, and experienced summer
8 temperatures that left lakes of water in the town park and required race staff to
9 heavily salt the course to keep it frozen. Aspen is seeing more rain events during
10 ski season (last year it rained during every month of winter) and warmer, wetter
11 shoulder seasons. The ski season is being squeezed on both ends — with
12 longer, dryer falls and warmer springs. The challenge for ski resorts is that most
13 run in deficit until spring break, which is crucial because it delivers much of the
14 profit for the season. Lose spring and your business fails.

15 The most recent research on the impacts of climate change on the
16 snowsports industry in the U.S. finds that “virtually all locations are projected to
17 see reductions in winter recreation season lengths, exceeding 50% by 2050 and
18 80% in 2090 for some downhill skiing locations.”² Trends measured on the
19 ground back up our anecdotal observations. Aspen Global Change Institute
20 reports that Aspen has warmed 2 degrees Fahrenheit (F) on average since 1940.
21 Just since 1980 winters are 23 days shorter, as measured by the number of frost-
22 free days. The region is anticipated to experience a rise in average temperatures

² <http://www.sciencedirect.com/science/article/pii/S0959378016305556> (July 2017)

1 by between 5.3 to 9.7 degrees F by 2100 under low- and high-emissions
2 scenarios respectively.³ *5280 Magazine* reported that Colorado “has already
3 seen a 2.5 degree bump in average daily highs since 1980. By 2050, we’re set to
4 see at least another 2.5 degree increase in annual average temps.”⁴ This
5 translates into direct economic loss.

6 A December 2012 report by POW and Natural Resources Defense
7 Council (NRDC)⁵ showed that low snow years result in reduced skier visits to
8 Colorado ski resorts and consequently significant losses in revenue and jobs.
9 The economist Marca Hagenstad, also testifying on behalf of ASC, Intrawest and
10 POW, provides updated modeling results for Colorado-specific economic
11 contributions from snowsports and impacts from low snow years.

12 This 2017-2018 winter season, we are getting a taste of how predicted
13 changes will affect the workforce and economy. As a result of the delayed start to
14 our winter season, volunteers are gathering food donations to support ski area
15 workers.⁶ ASC opened a soup kitchen to feed workers who are unable to work
16 due to the limited terrain open.⁷ Extrapolating from the experience of a few
17 Colorado resorts, the impact of cancellations on ski industry revenue this year is
18 already easily in the multiple tens of millions.

19 A large part of the snowsports economy is wrapped up in competitions,
20 from the X Games to the Olympics. If we want a prosperous future of snowsports

³ <http://www.agci.org/project/climate-change-and-aspen> (2014 Report, pages 12 and 13)

⁴ <http://www.5280.com/2016/11/climate-change-a-matter-of-degree/> (December 2016)

⁵ https://protectourwinters.org/climate_report/

⁶ <http://denver.cbslocal.com/2017/12/28/food-bank-ski-resort-snow/>

⁷ <https://www.aspentimes.com/trending/aspenskiing-co-feeds-employees-who-cant-work-because-of-slow-start/>

1 events in the U.S., we need to remember that venues are nothing without snow.
2 In December of 2016, Colorado's Beaver Creek canceled its World Cup races
3 due to lack of snow. A week later, nearby Breckenridge resort canceled its
4 Superpipe competition as part of the Dew Tour, due to late and low snowfall.
5 These events easily draw over 40,000 spectators who pump millions of dollars in
6 early-season revenue into the local economy over a weekend. But it's not just
7 early season. In late February of 2017, North America's largest Nordic ski
8 marathon, the American Birkebeiner, was cancelled due to unseasonably warm
9 weather. This event draws more than 11,000 skiers from around the world to
10 northern Wisconsin and is responsible for \$20 million in economic activity.⁸

11 As these examples begin to show, there is no real way to adapt to a
12 quickly warming planet. The only path to a sustainable snowsports industry is to
13 immediately begin rapid reductions in greenhouse gas emissions. Fortunately,
14 the CEPP offers the state a businesslike-approach to doing so in a way that
15 serves as a model for the rest of the world.

16 **Q. THE ACTIONS TRIGGERED BY THE COLORADO ENERGY PLAN WON'T**
17 **CHANGE THE CLIMATE TREND IN COLORADO ON THEIR OWN, SO WHY**
18 **SHOULD CLIMATE CHANGE BE A DRIVING FACTOR IN THIS DECISION?**

19 A. In the absence of federal action on climate, states are the leading actors when it
20 comes to mitigating the problem. Along with 20 other states that have committed
21 to meeting the Paris accords, Colorado's actions not only reduce emissions in a
22 meaningful way, but our state models progressive policy for the country and the

⁸ <https://www.twincities.com/2017/02/24/american-birkebeiner-cross-country-ski-race-cancelled/>

1 world. An example of such policy leadership is the Colorado rule regulating
2 methane leaks in natural gas production. That regulation, created in collaboration
3 with the environmental community and the oil and gas industry, tackles one of
4 the most potent greenhouse gases (methane) and has become a model for other
5 states. Former NASA scientist Drew Shindell has shown that reducing short lived
6 climate pollutants like methane can reduce planetary warming in the short term
7 while improving air quality and human health.⁹ So Colorado's methane rule is of
8 global significance. By adopting the stipulating parties' proposed portfolio and
9 integrating high levels of renewables into our grid, we would be showing similar
10 leadership for U.S. states and other countries.

11 **Q. IS THERE A RELATIONSHIP BETWEEN CLIMATE CHANGE AND POWER**
12 **COSTS FOR SKI RESORT OPERATORS?**

13 A. The ski industry in Colorado has an economic impact of almost \$5 billion
14 annually, according to a study¹⁰ by the trade group Colorado Ski Country USA.
15 It's not an industry the state can afford to sacrifice in the face of global warming.
16 As a result, communities whose hotels, restaurants, conference centers, schools
17 and governments all depend on the ski industry or its tax revenue agree that we
18 should do what we can to keep the industry alive.

19 One short-term way to do that is to expand our reliance on artificial
20 snowmaking to ensure we're able to open on a certain date, and to enable us to
21 remain open by filling in the gaps when warm spells encroach on the winter. The
22 challenge with that is threefold: first, increased snowmaking is very expensive.

⁹ <http://sites.nicholas.duke.edu/drewshindell/files/2015/01/Dr-SHINDELL-DUKE-University-v3.pdf>

¹⁰ https://www.coloradoski.com/media_manager/mm_collections/view/183

1 Second, if we use carbon-intensive electricity to make snow, it only contributes to
2 further warming. And third, models suggest temperatures will not be cold enough
3 for snowmaking at some elevations and this may add significant additional costs
4 to resorts. One recent report suggests that by 2050 it is possible that fewer than
5 40% of ski areas may be able, with current technology, to make enough snow to
6 open before the Christmas holiday.¹¹

7 The CEPP stipulation neatly tackles both issues. First, reducing the carbon
8 intensity of our electricity supply cuts the climate impacts of snowmaking. Adding
9 more wind and solar energy to the grid also protects consumers against fossil
10 fuel price spikes and possible long-term price increases, because utilities can
11 lock-in fixed rates at zero fuel cost, lowering and stabilizing consumer electricity
12 bills as a result.

13 Indeed, a recent Colorado PUC decision, after reviewing the benefits of
14 the 600 MW Rush Creek Wind Project purchase by Xcel Energy concluded: “The
15 project primarily saves customers money by displacing other more expensive
16 system energy costs. Public Service projects \$443 million in cost savings to
17 customers on a net present value basis under its base natural gas price
18 forecast.”¹²

19 **Q. WHAT ARE OTHER BENEFITS FOR THE COLORADO SKI INDUSTRY THAT**
20 **WEIGH IN FAVOR OF SUPPORTING THE STIPULATION?**

21 A. The ski industry is very energy intensive. Total electricity, fuel and natural gas
22 costs — for lifts, snowmaking, buildings, snowmelt and snowcats — can range

¹¹ <https://www.sciencedirect.com/science/article/pii/S0959378016305556>

¹² Colorado Public Utilities Commission, Proceeding No. 16A-0117E, Rush Creek Wind Decision No. C16-0958, (mailed date October 20, 2016).

1 from 2.5 to 5% of a company's operating revenue. Every dollar spent on energy
2 is a dollar not spent on raises, capital improvements, product improvement or
3 guest services. Keeping electricity costs stable and low — which would be
4 achieved through expanded renewables in the state — is one piece of the puzzle
5 in keeping this low-margin industry afloat.

6 An additional, ancillary benefit of wind power to the snowmaking business,
7 which requires abundant water: data from the U.S. Department of Energy's
8 report, *Wind Vision: A new era for wind power in the United States*, showed that
9 increased wind development at the national level could also reduce the impacts
10 of drought by helping to save over 6.5 billion gallons of water *every year by*
11 *2030*.¹³

12 **Q: ARE THERE OTHER ECONOMIC REASONS TO SUPPORT**
13 **CONSIDERATION OF THE CEPP?**

14 A: We see coal plants as likely “stranded assets” in a carbon-constrained world.
15 We'd rather see these plants come off the grid now, if that can be done in a cost-
16 effective manner, rather than wait until they become a financial liability as some
17 of the most expensive power on the grid. These two older units at Comanche
18 should be closed down now because they are uneconomic.¹⁴ As businesspeople,
19 we see the benefit in moving toward the most cost-effective sources of power.

20 **Q: WHY IS THE APPEARANCE, AND FACT, OF MEANINGFUL ACTION ON**
21 **CLIMATE IMPORTANT TO THE SKI INDUSTRY?**

¹³ https://energy.gov/sites/prod/files/2015/03/f20/wv_full_report.pdf,
and <https://energy.gov/articles/wind-vision-new-report-highlights-robust-wind-energy-future> (March,
2015).

¹⁴ Hill, Supp. Direct, pages. 45-49, Eves, Supp. Direct pages. 24-25.

1 A: The ski and snowboard industry has recently undergone consolidation, with
2 multiple acquisitions taking place. In many of these transactions, the future
3 viability of resorts in a climate-changed world was of direct concern to
4 purchasers. For example, a higher, colder resort such as Jackson Hole is more
5 likely to retain skiing through the end of the century. Lower, coastal resorts such
6 as Hidden Valley in New Jersey are already out of business. California resorts
7 experienced four years of continuous drought several years ago, just the kind of
8 extreme weather we'd expect to see in a warming world. These resorts, at least
9 based on the value of their capital, are worth hundreds of millions of dollars. But
10 if the last four years show limited operating income, the resort's real value comes
11 into question. Moreover, the industry has long been concerned that increasingly
12 obvious warming will prevent people from skiing — either by not taking up the
13 sport, not buying into real estate in ski country, or not seeing the sport as a
14 hobby or pursuit worthy of a lifetime. This could result in a declining industry and
15 faltering economies in ski country, where real estate is a large part of the
16 economy and tax base. Businesses need to be able to represent to their
17 customers, owners and shareholders that they take the climate problem seriously
18 and that the states in which they operate do too. And they need to be taking
19 meaningful and large-scale action to reduce future warming.

20 **Q: IS CLIMATE ACTION ALSO IMPORTANT TO THE OUTDOOR INDUSTRY AS**
21 **A WHOLE?**

22 A: The ski industry is only the most obvious victim of a warming climate. But the
23 outdoor industry — which nationally creates 7.6 million+ jobs and \$887 billion in

1 economic revenue, and which POW represents — is equally threatened.¹⁵ Each
2 sector has its own unique problems.¹⁶ Montana rivers and streams, for example,
3 are increasingly too hot to fish. As a result, state agencies are forced to restrict
4 afternoon fishing through so-called “hoot owl” rules,¹⁷ which directly affect the
5 fishing economy. Outdoor clothing manufacturers lose money when it doesn’t get
6 cold and when snow doesn’t fall.¹⁸ The Ouray ice park in Colorado, an economic
7 engine for the region, is increasingly struggling with warm temperatures,
8 according to Dan Chehayl, executive director of Ouray Ice Park Incorporated.¹⁹
9 The whitewater rafting industry is seeing earlier runoff that happens all at once,
10 as hydrographs change.²⁰ Pick your sport — they’re all affected. It’s for these
11 reasons that iconic brands like Orvis, The North Face and REI are increasingly
12 advocating for action on climate.²¹
13

¹⁵ <https://outdoorindustry.org/advocacy/>

¹⁶ <https://conservationco.org/2016/10/adventure-seekers-and-nature-lovers-struggle-to-plan-for-climate-change/>

¹⁷ http://fwp.mt.gov/news/newsReleases/closures/waterbodies/nr_0113.html

¹⁸ <https://www.cbsnews.com/news/the-nasty-economic-effects-of-nice-winter-weather/>

¹⁹ Personal communication with Auden Schendler, 12/6/2017

²⁰ <https://www.yaleclimateconnections.org/2015/09/drought-conditions-deflate-rafting-business/>

²¹ <https://thinkprogress.org/ceos-of-aspen-skiing-company-and-the-north-face-climate-change-threatens-our-livelihoods-and-yours-63bd3f6f43d2/>

III. WORTH PROTECTING

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Q. ARE THERE OTHER REASONS, BEYOND ECONOMICS AND CLIMATE, THAT YOU SUPPORT CONSIDERATION AND APPROVAL BY THE PUC OF THE CEPP?

A. Aspen's ski industry is 70 years old. It started in 1947, created in part by Tenth Mountain Division World War II veterans who had trained at nearby Leadville and used to ski to Aspen on the weekend. Returned from the war and intense, high-casualty combat in Italy, they deeply understood the sport of skiing; they were also escaping some of the experiences they had seen in Europe. Aided in their efforts by Walter Paepcke, a Chicago businessman who also developed the Aspen Institute, the Aspen Music Festival and whose wife Elizabeth later founded Aspen Center for Environmental Studies, they created a resort with a unique and durable mission. Its goal was not to become a playground for the wealthy, but instead to bring people — and yes, some of them would be wealthy and influential, but not all — into a spectacular mountain environment that would, through its beauty and remoteness, “take them out of their usual lives,” as Paepcke said, expose them to new ideas (through art, music, culture and science) and send them off to help build the good society — to improve the world. The Paepckes' vision is explicitly alive today in the operation of our ski resort and within our community, where we see Aspen not solely as a place to make money and support a local economy (though that is important) but also to allow people the opportunity to renew their spirit, to rest and learn and return to

1 the world refreshed and energized, ready (even obligated) to make a difference.

2 In fact, it's in the spirit of this vision that I am testifying today.

3 The sport of skiing exploded in the latter part of the 20th century, and grew
4 into the kind of activity that whole families — across generations — could
5 participate in; which included, by definition, a relaxing period of community
6 togetherness after the day's sport, which we call "Après ski," also unique to
7 skiing. Participants knew intuitively what we know today: that exercise and dwell-
8 time in the natural world provides clear, measurable and tangible human health
9 benefits. Indeed, new research comes out every day proving what Florence
10 Williams' recent book, *The Nature Fix*,²² reveals: that nature makes us happier,
11 healthier and more creative. That's in part why each winter, our community hosts
12 more and more veterans trying to recover from their experiences in war, through
13 programs like Huts for Vets, or Challenge Aspen's Military Opportunities
14 programs, which provides adaptive therapeutic recreation and wellness
15 experiences for military personnel diagnosed with cognitive and/or physical
16 disabilities — some of whom may have fought for the same storied 10th
17 Mountain Division, but this time in Iraq and Afghanistan. It's no wonder these
18 programs thrive here: it's how we started in the first place. And it's entirely within
19 this spirit that this December we hosted our friend and Iraq combat veteran Stacy
20 Bare to talk about nature, value, duty and the healing effects of being in the
21 natural world.²³

²² <https://www.amazon.com/Nature-Fix-Happier-Healthier-Creative/dp/0393242714>

²³ <https://www.aspensnowmass.com/while-you-are-here/events/aspen-u-speaker-series/aspen-u-december-14>

1 Aspen's work with veterans is just one example of a segment of society
2 that benefits from the snowsports industry. There are many more. Other ski
3 areas have similar stories, specific to their own community and geography, each
4 as deep and history-laden and personal as Aspen's. And tied to each of these
5 places and their stories are millions of passionate participants in the sport.

6 Thriving societies ensure that their citizens have opportunity to relax, to
7 exercise, and to engage the mind, body and spirit in the outdoors, in arts and
8 culture and citizenship. We intuitively know that without these opportunities for
9 renewal, people stagnate, and lose the creativity and innovation they need to
10 drive society forward. This is as true in Aspen as it is in poor urban areas, where
11 research shows that parks and open space increase well-being.²⁴ Aspen, and the
12 national ski industry we're part of, provides a piece of this critical infrastructure of
13 a healthy national community. The idea that all this may be threatened, that all
14 our memories, our generations of skiing stories, our long history, the opportunity
15 for renewal we provide, and our deep passion, could one day fade away, the
16 victim of an overreliance on fossil fuels, is heartbreaking. It's made more so by
17 the fact that burning coal to run our resorts is no longer necessary as it was in
18 the past, and now is not even economic. This case before the PUC, which might
19 appear from the outside to be the mundane work of state bureaucracy, is actually
20 about much greater issues. In fact, it is a reckoning: over what conditions are
21 necessary to ensure a thriving nation; about the sorts of stories we will be able to
22 tell our children; and ultimately about whether in a time of seismic and painful

²⁴ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0153211> (April 2016)

1 change we will have the courage to make decisions of great and longstanding
2 vision.

3 **Q. DOES THIS CONCLUDE YOUR ANSWER TESTIMONY?**

4 **A. Yes.**

STATEMENT OF QUALIFICATIONS

As Senior Vice President of Sustainability and Community Engagement at Aspen Skiing Company, I'm responsible for reducing the environmental impact of the company, pushing for large-scale climate solutions at the policy and clean energy level, and engaging the community on a range of sustainability issues, from housing to transportation. Much of my work and ASC's philosophy is described in my book, *Getting Green Done: Hard Truths from the Front Lines of the Sustainability Revolution*, which NASA Climatologist Dr. James Hansen called "an antidote to greenwash." I have twice testified to congressional committees in Washington about the impacts of climate change, and have written many dozens of popular essays and academic papers, published in *Harvard Business Review*, *Scientific American*, *Climatic Change*, *L.A. Times*, *The Denver Post* and other media. I speak regularly at business schools, including CU, Dartmouth, Harvard, Yale and MIT, as well as at corporations, including Starbucks headquarters in Seattle and Google's New York offices. I was appointed by Governor Owens to the state Pollution Prevention Advisory Board and by Governor Hickenlooper to the Office of Outdoor Recreation Advisory Council. I serve on the board of Conservation Colorado, POW and the Community Office for Resource Efficiency.

SAMPLE PUBLICATIONS

Getting Green Done: Hard Truths from the Front Lines of the Sustainability Revolution. Public Affairs, February 2009. Translated into Chinese.
www.gettinggreendone.com

"Applying the Principles of Industrial Ecology to the Guest Services Sector." *The Journal of Industrial Ecology*, Yale/MIT Press, summer, 2003.

"Business Tipping Toward Climate Advocacy." *The Environmental Forum*. Published by the Environmental Law Institute. January/February 2018.

- “Cigarettes’ Lessons for Climate Change: Successful Anti-smoking Efforts of Decades Past Offer a Blueprint for How We Might Tackle Global Warming,” *L.A. Times*, March 04, 2012.
- “Climate Revelations: An Atheist Concludes He Can’t Talk About Climate Change Without Talking About God.” *Orion magazine*, January/February 2009.
- “Corporations Will Never Solve Climate Change.” With Naomi Oreskes. *Harvard Business Review* online. December 4, 2015.
- “Energy Credit Buyers Beware.” *Harvard Business Review*, September 2006.
- “Foundations Shouldn’t Shrink from Supporting Marches to Curb Climate Change.” With Lukas Haynes. *Chronicle of Philanthropy*, October 2014.
- “How Business Can Influence Climate Policy.” *Scientific American*, March 2009.
- “LEED is Broken: Let’s Fix it,” with Randy Udall. Grist.org. Covered by the *Wall Street Journal* and *Architectural Record*.
- “Making Rosa Parks.” Springboard commentary, *Climatic Change*, July 2013.
- “Priming the Pump for Emissions Reductions.” *Journal of Industrial Ecology*, February 2008.
- “Reputation: When Being Green Backfires.” *Harvard Business Review*, October 2007.
- “Science Based Carbon Targets for the Corporate World: The Ultimate Sustainability Commitment or a Costly Distraction?” *Journal of Industrial Ecology*, Yale/MIT Press, September 2015.
- “Shift Gears in Drive against SUV Owners.” *L.A. Times*, January 6, 2003.
- “The Factor Environmental Ratings Miss,” with Michael Toffel, in *MIT/Sloan Management Review*, fall, 2011.
- “The First Casualty of Climate Change.” *The Denver Post*, June 6, 2011.
- “Trouble in Paradise: The Rough Road to Sustainability in Aspen.” *Corporate Environmental Strategy*, Volume 8, No. 4, 2001.
- “Use Environmental World’s Fair to Show Progress,” with Ed Marston. *Philadelphia Inquirer*. February 16, 2006.
- “Where’s the Green in Green Business?” *Harvard Business Review*, June 2002.

Additional essays and articles published in *Orion*, *Rock and Ice*, *High Country News*, *The Denver Post*, *Canoe and Kayak*, *Paddler*, *Mountain Gazette*, and the books *Living in the Runaway West: Partisan Views from Writers on the Range*, *How the West Was Warmed* and *Hell's Half Mile: River Runners' Tales of Misadventure and Hilarity*.

EDUCATION

BA in Biology and Environmental Studies, *cum laude*, 1992, Bowdoin College, Brunswick, ME

TRAINING/CERTIFICATION/VOLUNTEER WORK

- Board of Directors, Community Office for Resource Efficiency, 2016–present
- Adviser, Colorado Outdoor Recreation Industry Office, 2015–present
- Board of Directors, Conservation Colorado, 2009–present
- Elected to Town Council, Basalt, Colorado, 2016–2020
- Board Chair, Protect Our Winters, 2013–2017
- LEED 2.0 Accredited Professional, U.S. Green Building Council
- Steering Committee, Rocky Mountain Climate Organization, 2004–2009
- Colorado Governor's Pollution Prevention Advisory Board, 2003–2006
- Carbondale Planning and Zoning Board, 1999–2000
- EMT, Carbondale & Rural Fire Protection District, 1995–1999
- Carbondale Environmental Board, 1997–1999

AWARDS/RECOGNITION

- 2006 *TIME Magazine* Climate Innovator
- 2007 EPA Climate Saver
- 2008 University of Colorado Wirth Chair Pioneer of the New Energy Economy
- 2009 E Town E-chievement Award
- 2018 *Powder Magazine* Moving Mountains Humanitarian Award

CONGRESSIONAL TESTIMONY

March 20, 2007.²⁵ “Toward a Clean Energy Future: Energy Policy and Climate Change on Public Lands.” Oversight Hearing Before the Subcommittee on Energy and Mineral Resources of the Committee on Natural Resources, U.S. House of Representatives. One Hundred and Tenth Congress, First Session.

September 13, 2017. “Impacts of Climate Change and the Need for Policy Action.” Testimony to the Bipartisan Climate Solutions Caucus of the House of Representatives.²⁶

²⁵ <https://www.gpo.gov/fdsys/pkg/CHRG-110hrg34820/pdf/CHRG-110hrg34820.pdf>

²⁶ <https://panetta.house.gov/media/in-the-news/bipartisan-climate-solutions-caucus-hears-how-climate-change-devastates-western>