

# 2015 CLIMATE CHALLENGE REPORT

(2014 RESULTS)



## KEEP WINTER COOL

NATIONAL  
SKI AREAS  
ASSOCIATION



## Acknowledgements

The **National Ski Areas Association** (NSAA) would like to thank the following organizations for their support and individuals for their contributions in developing the Climate Challenge.

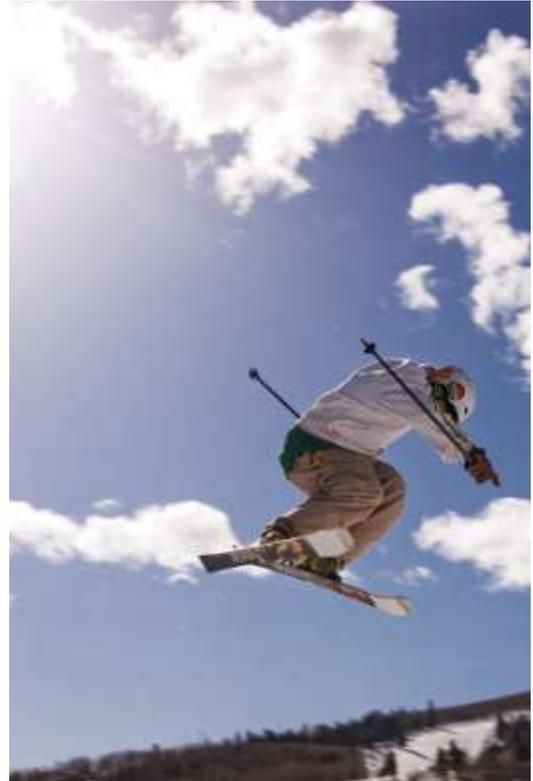
- Jon Bishop, Jackson Hole Mountain Resort
- Tom Easley, Rocky Mountain Climate Organization
- Brent Giles, Park City Mountain Resort
- Alan Henceroth, Arapahoe Basin
- John Loomis, Northstar-at-Tahoe
- Sha Miklas, Arapahoe Basin
- Maura Olivos, Alta Ski Area
- Geraldine Link, National Ski Areas Association
- Judy Dorsey, Brendle Group



## INTRODUCTION

This year marked the 4<sup>th</sup> year of the **Climate Challenge**, a voluntary program designed to recognize ski areas that are committed to reducing their impact on the climate. Challengers do this by inventorying and reporting on their carbon footprints, setting goals for carbon reduction, implementing at least one on-site carbon reduction strategy per year, and engaging in climate change advocacy efforts.

Overall, Challengers reported a total of 191,400 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) emissions across all resorts in the 2014 reporting year. In 2014, resorts implemented on-site projects that reduced emissions 1,700 MTCO<sub>2</sub>e while purchasing Renewable Energy Credits or carbon offsets equivalent to 41,192 tons. The cumulative impact of on-site projects (which accrue annual reductions for the life of the project) and 2014 REC purchases totals 454,201 metric tons reduction in 2014, or 23 percent of total 2014 emissions.



The table below provides an overview of the progress ski areas have been making towards reducing greenhouse gas emissions during the four years of the Climate Challenge.

	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Number of Ski Areas Participating	8	18	19	30
On-Site Emission Reductions* (annual)	295	1,067	947	1,700
On-Site Emission Reductions* (cumulative)	295	1,362	2,309	4,009
Renewable Energy Credits Purchased*	9,833	40,255	45,046	41,192

\* Measured in metric tons of CO<sub>2</sub>e

Each year the Climate Challenge program seeks to build upon its successes to improve the operations of existing participants while adding new members. To this end, the program will be welcoming 4 new members in 2015, adding a returning member, and continuing to work on establishing benchmarking metrics for the participants based on historical data and ski area operational characteristics. The ski areas joining the Climate Challenge for the 2014-2015 season are Crystal Mountain (MI), Deer Valley, Hunter Mountain, Jiminy Peak (returning) and Taos Ski Valley.

## WHY THE CLIMATE CHALLENGE?

Climate change presents challenges to the ski industry that require proactive planning and action and bold leadership. The Climate Challenge provides a framework for participants to engage in a multi-year process that enables them to plan and implement actions that will reduce emissions, share those successes industry wide, and collaborate with others in the industry to leverage the collective power of working together on climate issues.

A 2010 NSAA survey showed that only 10% of responding ski areas had completed a GHG inventory – though 80% were very interested in addressing climate issues.

## GOALS OF THE CLIMATE CHALLENGE

- **Higher standard:** The program will raise the standard for ski areas wishing to take their sustainability performance to the next level.
- **Long-term:** The program will be multi-year, seeking to compound the benefits of actions taken by participants over many years and to grow the number of participants from year to year.
- **Cost-efficient:** The program will leverage the investment of participants and sponsorships to deliver more value to participants than their individual investments.
- **Credible:** Quantification of GHG inventories, targets, and reduction measures will be developed in alignment with a credible protocol, using boundaries consistent with industry approaches.
- **Transparent:** The approach taken by the program will be transparent to participating ski areas and the public.
- **Fair:** The program will be fair, facilitating participation for ski areas of all sizes, regions, and focuses.
- **Easy:** The program will provide participating ski areas with guidance and tools to make participation as simple as possible.
- **Well-recognized:** The program will provide recognition for participating ski areas and for high performance.

## CHALLENGE ELEMENTS

**Ski areas** participating in the Challenge commit to a five-step process each year.



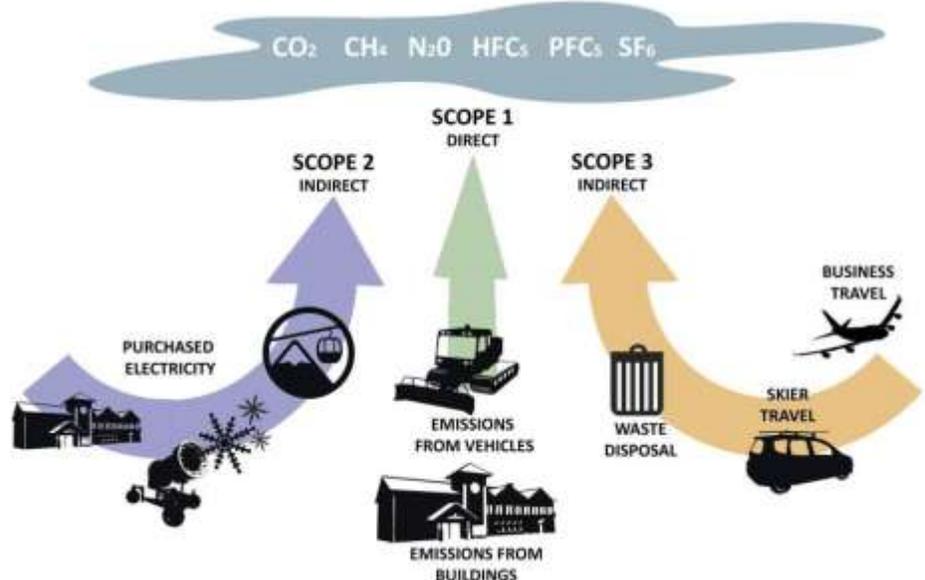
### INVENTORY

In order to understand the impact of their operations, Challengers inventory GHG emissions for ski area operations. Inventories are required to include direct emissions at the ski area (Scope 1) and indirect emissions from purchasing energy, such as electricity (Scope 2).

Other emissions, such as those from waste disposal or business travel, can be included at the discretion of the Challenger. The Challenger can choose to inventory emissions for the fiscal or calendar year.

For 2014, Challengers prepared inventories using a tool that follows the guidelines of The Climate Registry's General Reporting Protocol:

[www.theclimateregistry.org/downloads/GRP.pdf](http://www.theclimateregistry.org/downloads/GRP.pdf)



## TARGET



With an understanding of the emissions generated by their operations, Challengers prepare a target (or goal) for reducing emissions. The structure of the target is flexible: the Challenger can select which emissions to reduce, how much they will be reduced, and over what time period the target will be achieved. Regardless of the structure of the target, Challengers define a target that will reduce GHG emissions relative to an established baseline GHG inventory for ski area operations.

Targets are the means for measuring Challenger progress and hopefully will become useful planning tools as Challengers make operational decisions in years to come.

### THE LANGUAGE OF CARBON

**Carbon Dioxide (CO<sub>2</sub>):** The major heat-trapping gas whose concentration is being increased by human activities. It also serves as the yardstick for all other GHGs. The major source of CO<sub>2</sub> emissions is fossil fuel combustion. Carbon dioxide emissions also result from clearing forests and burning biomass. Atmospheric concentrations of CO<sub>2</sub> have been increasing at a rate of about 0.5 percent a year, and are now more than 30 percent above pre-industrial levels.

**CO<sub>2</sub>e:** Carbon dioxide equivalent, a measure that is used to express the concentration of all heat trapping gases in terms of CO<sub>2</sub>.

**MTCO<sub>2</sub>e:** A metric ton of CO<sub>2</sub>e. A metric ton is equivalent to 1.102 short tons or 2,204 pounds.

## **REDUCE**

Challengers commit to take one measurable step to reducing their GHG emissions each year in order to progress toward their target. Examples of reduction projects include increased energy efficiency in buildings, lifts, and snowmaking; switching to more efficient fleet vehicles; increasing diversion of solid waste to reuse; recycling or composting; or installing a renewable energy system on site.

The Climate Challenge views purchasing a renewable energy credit (REC) or a carbon offset as a means of contractually demonstrating an emission reduction. These instruments may be used by Challengers to achieve targets but are not recognized for the Reduce component of the Challenge. In other words, at least one reduction project must occur on site in each Challenge year.

Outsourcing or divesting emission sources is not allowed as a reduction strategy for those participating in the Challenge. For example, outsourcing a restaurant to a concessionaire during the Challenge will not be considered a reduction in emissions from a baseline that includes the restaurant.

## **ADVOCATE**

Advocacy is a core component to the Challenge's overall goal. The advocacy element of the Challenge helps communicate important efforts made by the ski industry to leaders and legislators on a national level, and supports regional or national legislation or regulation targeting climate issues. Members are required to endorse at least two energy/climate change advocacy letters including sending correspondence from the resort to their Congressional delegation on the resorts' efforts and the ski industry's efforts on the Climate Challenge.

Additional advocacy options include engaging in climate advocacy at the state level, writing an editorial or letter to the editor about climate change, or attending a climate-related event with the NSAA.

## **REPORT**

Having completed the first four activities in the Challenge, Challengers report a summary of their results to the Climate Challenge program and the public. The summary includes the following elements:

- Total GHG emissions in MTCO<sub>2</sub>e
- Stated reduction target
- A narrative description of reduction activities
- Documentation of advocacy requirements

Challengers are asked to be complete and accurate in reporting to the Challenge. The goals of the Challenge are larger than a single ski area and are best served when all participating ski areas make their best effort. To this end, all submitted inventories, targets, and reduction activities are reviewed by a third-party to ensure they are eligible and reasonable with respect to the program's standards and expectations.

## **ENCOURAGED ELEMENTS**

In addition to the four program requirements, Challengers are encouraged to undertake a number of activities to reduce emissions in indirect ways that may not be reflected in their inventories but may still have a significant impact on global emissions. These activities are recognized and supported by the Climate Challenge. Some examples of these indirect activities are described here:

- Skier transportation programs – many ski areas are investing in infrastructure, providing incentives, and educating their skiers and riders to reduce single-occupant vehicle travel to ski areas.
- Skier education/communications – the ski industry's visibility to millions of skiers and boarders every year provides tremendous opportunity to lead by example.
- Comprehensive reduction planning – developing a comprehensive climate action plan and integrating it into capital planning and budgeting activities can help to elevate the consideration of GHG reduction activities.
- Purchase of renewable energy credits or offsets – many resorts invest in renewable energy credits or carbon offsets to support the reduction of emissions.



## CHALLENGE RESULTS

The following sections present the outcomes of the Inventory – Target – Reduce – Advocate process for this year’s Climate Challengers. The Challengers represent a variety of ski area sizes, regions, and operational characteristics. In addition, the carbon intensity of the electricity they purchase varies widely. In other words, ski areas are all unique; however, they all have committed to reducing their GHG impact.



During 2014, the Climate Challenge worked with all participating ski areas to begin the process of determining the best metrics to use for benchmarking a ski area’s GHG inventory. Benchmarking is important because it can be used by ski areas to determine their relative climate change impact against other ski areas that share similar characteristics such as size, climate, and operations. This year, the Climate Challenge began collecting a variety of information that can be used as metrics such as ski area acreage, acres of maintained trails, acres with snowmaking equipment, total number of days open, amongst others. The results of this effort will be available only to Climate Challenge participants.

Overall, Challengers reported a total of 191,400 MTCO<sub>2</sub>e of emissions across all resorts in the 2014 reporting year. In 2014, resorts implemented on-site projects that reduced emissions 1,700 MTCO<sub>2</sub>e while purchasing RECs equivalent to 41,192 tons. The cumulative impact of on-site projects since 2011 (which accrue annual reductions for the life of the project) and 2014 REC purchases totals 454,201 metric tons reduction.

The table below provides an overview of the progress ski areas have been making

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towards reducing greenhouse gas emissions during the four years of the Climate Challenge.

	2011	2012	2013	2014
Number of Ski Areas Participating	8	18	19	30
On-Site Emission Reductions* (annual)	295	1,067	947	1,700
On-Site Emission Reductions* (cumulative)	295	1,362	2,309	4,009
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\* Measured in metric tons of CO<sub>2</sub>e

Challengers were also tasked with advocating for climate change or energy policies during the 2014/15 season. They accomplished this requirement in a variety of ways, which included:

- Sending direct correspondence to their Congressional delegation regarding climate change legislation
- Endorsing industry climate change initiatives such as the Business for Innovative Climate and Energy Policy's climate declaration
- Endorsing the U.S. EPA's Clean Power Program
- Endorsing federal carbon tax legislation
- Endorsing a letter to President Obama to take strong action in the upcoming Paris UN Climate Conference
- Writing letters to the editor to local and regional newspaper about climate change and the Climate Challenge program

The remainder of this section provides the results for individual participating ski resorts in alphabetical order.



#### Alta Ski Area – Utah

INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	5,156	Alta will reduce emissions 20 percent below 2011 emissions by 2020.
Scope 3 (solid waste)	266	
Total	5,422	

#### REDUCE

Alta upgraded interior lighting to LED, added a digital control automation system to their Cat shop, and upgraded their snowmaking pump to a VFD.

## Arapahoe Basin – Colorado



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	3,784	Arapahoe Basin Ski Area will reduce emissions by 3 percent under 08-09 levels by 2020 and will reduce its building-related emissions by 10 percent per square foot by 2020.
Scope 3 (solid waste)	100	
Total	3,884	

### **REDUCE**

This season Arapahoe Basin installed a waste-oil burning furnace in their Lift and Vehicle Maintenance facility.

### **OTHER PROGRESS**

In addition to yearly sustainability projects, Arapahoe Basin is constantly striving to reduce greenhouse gas emissions in any way the resort can. There are a number of programs the resort undertakes at the mountain to further this goal through education, policy, and planning.

One such program is the carpooling initiative for both employees and guests. Arapahoe Basin is privileged to have service to and from the mountain by the Summit Stage, a free bus system that links most ski areas and major destinations within Summit County. Guests are encouraged to ride the bus or carpool with a number of incentives, including significantly discounted lift tickets and reserved parking spaces in prime locations closest to chairlifts and base lodge. Employees are also encouraged to ride the bus or car pool every day of the year; however, carpooling is made mandatory for employees on weekends during the spring months. In addition to the free bus and encouraging employees to bring three or more people per car, the Basin also runs shuttles from employee housing and a few other central locations on these days. These efforts save on parking stresses, as well as limiting the number of cars on the road, gallons of gas burned, and any associated emissions.

Another step Arapahoe Basin is taking to further its sustainability message and goals in partnership with a number of local nonprofits and conservation groups. Arapahoe Basin's Employee Environmental Fund benefits two conservation groups, Friends of the Eagle's Nest Wilderness and the Continental Divide Land Trust, with more than \$2,000 donated each year. Employees have the option to donate \$1 or more from each paycheck, which The Basin

matches and splits between the two groups. The resort also works very closely with its local conservation center, High Country Conservation, which provides the community with sustainability solutions from composting tips and energy audits to sustainability curriculums in local schools. Every spring Arapahoe Basin hosts the Save Our Snow event as a fundraiser benefitting the conservation center. The event brings many of the resort's partners and local companies together to highlight sustainability, and between the sale of raffle tickets and a portion of each lift ticket, raises quite a bit of money to help with their programs. The 2014 event, which was held in conjunction with the New Belgium Brewing scavenger hunt, raised more than \$7,300.

Arapahoe Basin has also integrated sustainability into all of its training and orientation materials and built environmental awareness into every department's daily activities. There is a no-idling policy in place for all company vehicles, as well as for guests. There are even sustainability purchasing guidelines that empower purchasers to make responsible decisions, even at the cost of the company. All of these efforts and more combine to make Arapahoe Basin as sustainable as it can be despite the often resource and energy intensive nature of the business. Arapahoe Basin acknowledges its imperfections yet, feels that every effort, no matter how small, is a step in the right direction. Arapahoe Basin is committed to walking lighter on the planet, even in our ski (and snowboard) boots!

**Aspen Skiing Company - Colorado**



INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	24,916	Aspen Skiing Company will reduce absolute emissions by 25 percent from 2000 baseline by 2020.
Scope 3 (solid waste)	19	
Total	24,935	

**REDUCE**

Aspen upgraded snowmaking equipment at all four ski areas, and hired their first energy manager.

**Beaver Valley Ski Club – Ontario, Canada**



INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	689	Beaver Valley Ski Club will reduce emissions by 6 percent under 2012 levels by 2020.
Scope 3 (solid waste)	10	
Total	699	

**REDUCE**

Beaver Valley replaced the roof on the Alpine Centre and added R-value 20 rolled fiberglass installation.

**OTHER PROGRESS**

In the past eight years, Beaver Valley Ski club has implemented many sustainability related initiatives that have contributed to reducing the club's carbon emissions as well as awareness and education. From eco-efficient washrooms to staff sustainability workshops, the small club of 95 skiable acres and 775 member families works hard to serve as a local leader in climate change reduction. Waste management efforts, including the introduction of an organics program, have reduced carbon emissions by 43.2MTCO<sub>2</sub>e diverting 86,400lbs of garbage from going to the landfill. This is a 6% reduction of the resorts total Greenhouse gas emissions. Additional programs include river research and rehabilitation, sustainable forest management, collaborations with sustainable business programs at local universities, and continuous adoption of more efficient technology. Beaver Valley Ski club is proud to be the first Canadian resort to participate in the Climate Challenge.



INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	1,302	
Scope 3	Not reported	Boreal & Soda Springs will reduce emissions by 450 MTCO <sub>2</sub> e by 2014.
Total	1,302	

**REDUCE**

Boreal replaced windows at Soda Springs Lodge, insulated and weatherized lift shacks and lodge doors, Woodward HVAC management system, began using washable dishes, and began making bio diesel from kitchen waste oil to use on ski lifts.

**OTHER PROGRESS**

Boreal Mountain Resort, with its parent company POWDR Resorts, has worked to reduce carbon emissions and implement energy saving strategies & procedures over the past 8 seasons. Boreal upgraded its snowmaking system to a 100% automatic, low-energy system, which saves 280 tons of carbon emissions per year. The resort has replaced lighting systems to reduce kilowatt hours by 50% per year, upgraded to a new LED freeway sign to save over 93% of carbon from entering the atmosphere each season, and replaced windows and doors across the resort to save on heating energy. Boreal is also taking on site vegetable oil from the cafeteria, processing it into 100% bio diesel, and using it to run chairlifts during operations. This new project aims to save 186 hours of lift electricity usage each season.

Additionally, Boreal has purchased energy credits through Renewable Choice Energy to offset 100% of the grid supplied electricity consumed at Boreal Mountain and Soda Springs Winter Resort. The renewable energy credits total nearly 15 million kWh, which is equivalent to removing 1,573 passenger vehicles from the road for a year. Renewable energy is used at Boreal to power snowmaking, lodge electricity, plus all chairlifts and nightlights. Boreal also makes environmentally friendly purchases including new construction materials and operating supplies. Through the Protect Your Playground initiative, Boreal is encouraging community involvement in environmental stewardship with several very exciting projects.

## Copper Mountain – Colorado



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	22,425	Copper Mountain will reduce emissions by 12,000 MTCO <sub>2</sub> e by 2015.
Scope 3 (solid waste)	990	
Total	23,415	

### REDUCE

Copper Mountain increased recycling programs, implemented LED lighting projects, and began composting.

### OTHER PROGRESS

Copper Mountain continues to operate two Windspire Vertical Axis Wind Turbines, a solar voltaic array and a solar thermal array resulting in over 12,000 kWh of generated power in the past year. Copper Mountain has continued its dedication on recycling across the resort and composting in specific resort food and beverage locations. We have increased our recycling and composting efficiency by implementing new procedures. Due to these efforts over the past season the resort has recycled over 173 tons and has nearly doubled our amount of composting to 64 tons. Copper continues to operate 10 filtered water bottle filling stations across the resort avoiding the production on 177,000 12oz plastic bottles and sells inexpensive durable, collapsible, and reusable water bottles available near the stations. Copper was successful in diverting 236 tons of waste from landfills this past season. Throughout this process Copper has placed guest educational signage emphasizing the power of reusing products and reducing consumption. The Copper Environmental Foundation (a non-profit 501c3) is a program dedicated to the environmental sustainability of Copper, Frisco and the surrounding areas. The Copper Environmental Foundation (CEF) was started in November 2007 by Copper employees, with a long-term goal to support environmental initiatives in Summit County and the surrounding area. Over the past years the Environmental Foundation supported such organizations like Friends of the Dillon Ranger District, Summit County Pre-School, Summit School District, Keystone Science School, Girl Scouts and High Country Conservation Center.

**Grand Targhee Resort – Wyoming**



INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	2,449	Grand Targhee Resort (GTR) will reduce emissions by 2 percent under 2014 levels by 2020.
Scope 3 (solid waste)	93	
Total	2,542	

**REDUCE**  
Grand Targhee installed 24 motion sensor lights.

**OTHER PROGRESS**

**MOUNTAIN OPERATIONS SUSTAINABLE INITIATIVES**

**Ski Patrol**

Assigned recycling boss for each season to manage recycling at all patrol work stations. No disposable cups at work stations. “Clown Car Challenge” – keeping track of car pools with at least 3 patrollers per car, see who does the most = reward. Hike instead of burning gasoline – Keeping track of how many times a patroller opts to use leg power over option of using snowmobile tow, reward for the most.

**Lift Maintenance**

Installed timers on lift terminal and lift house heaters and lights. Turned off heaters for the season at some lift terminals. Department Car pools daily.

**Vehicle Maintenance**

Recycle all steel waste along with normal recycling. Waste motor oil goes to local business to fuel heaters. Sump waste water and used filters removed by contracted disposal company. Mountain spills beyond 5 gallons in snow or dirt cleaned up as best as possible and brought to sump. Use of synthetic fluids = less fluid changes = less waste.

## **Human Resources**

Operation paperless! 33% of our employees are paperless and do not receive pay statements.

## **Marketing & Reservations**

Print in black and white and as little as possible. Recycle all paper waste. Turn off lights and computers, and turn down heat at end of day. Collect \$1 donations on new reservations for POW. Total collected YTD: \$1600.

## **Ski & Snowboard School**

Developed building checklists for each facility detailing heat, lights and computer turndowns/off each night. Electricity data is not currently available but Grand Targhee was diligent in managing electrical use. Encouraged bus riding with staff resulting in a high number of staff that used bus nearly daily.

## **Facilities**

Install Motion Sensor lights throughout resort base public areas. Converting 11 urinals in men's bathrooms to low flow: ½ gallon per flush. Shut down plaza boilers completely during warm/dry periods. Turn off furnaces to outlets with doors/windows open during warm/dry periods. Tracking expense vs. revenue of current recycling program for 2014-2015 ski season. Lighting upgrade to one test facility; Fall River energy incentive.

## **Resort Shuttle**

Ridership continues to increase with 13/14 riders – 18,861 riders in 2013/2014

Jackson Hole Mountain Resort – Wyoming



INVENTORY (calendar year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	6,554	By 2015, Jackson Hole Mountain Resort (JHMR) will reduce its GHG emissions (from propane/natural gas, gasoline/diesel, and electricity consumption) per guest visit by 10 percent below 2009 baseline levels.
Scope 3 (solid waste)	NR	
Total	6,554	

**REDUCE**

JHMR modified a Chevy 3500 Duramax to run on waste vegetable oil, installed lighting retrofits in retail and office areas, and purchased RECs to offset lift electricity consumption.

**OTHER PROGRESS**

JHMR participated in “SHIFT.” An opportunity to engage with local community members in various discussions exploring the intersection of conservation with nature, culture, and adventure. SHIFT is an annual festival that celebrates the future of conservation with Food, film, speakers, workshops, and outdoor adventure.



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	23,327	Killington / Pico Resorts will reduce emissions by 13,000 MTCO <sub>2</sub> e by 2014.
Scope 3 (solid waste)	215	
Total	23,542	

**REDUCE**

Killington/Pico installed air curtains at main entries to save energy and maintain building temperatures, purchased electricity generated from methane at a local dairy, and employed an LED lighting migration project.

**OTHER PROGRESS**

In 2014, Killington Resort teamed up with Green Mountain Power to introduce the use of Cow Power to run the K-1 Express Gondola. In 2014, Killington nearly doubled the commitment to this innovative, alternative energy by enrolling its new Peak Lodge energy use into the program. Participation in Cow Power has created a personal connection between the Resort and the local dairy farm industry as Killington works towards reducing its impact on the environment. Additionally, the Resort has empowered its community - from skiers and snowboarders, to business owners, homeowners, students and employees - to help the future of outdoor spaces. Often times the most inspired ideas come from these devoted individuals and now they have the opportunity to earn a Protect Your Playground grant. Through Protect Our Playground, Killington supplies selected community members the tools and resources to turn their innovative, environmentally focused concepts into a reality. Killington Resort and Pico Mountain continue to strive to be more energy efficient, reduce their carbon footprint and empower sustainable energy suppliers and its community to collaborate and make a systemic, lasting contribution to the environment.

## Las Vegas Ski & Snowboard Restort – Nevada



INVENTORY (Fiscal year 2014) Scope 1 and 2 (required)	MTCO <sub>2</sub> e	TARGET
Scope 3	884	Las Vegas Ski & Snowboard Resort (LVSSR) will reduce emissions by 120 MTCO <sub>2</sub> e by 2015.
Total	Not reported	
	884	

### REDUCE

LVSSR increased battery storage capacity and added more solar panels in addition to retrofitting the lighting to LED.

### OTHER PROGRESS

As good stewards of the land, Las Vegas Ski and Snowboard Resort embraces every opportunity to reduce the impact of its operation in the high alpine environment. This unwavering commitment by LVSSR and its parent company, POWDR Corporation, is to continually improve in reducing the carbon emissions produced at every stage of resort operation. LVSSR has committed to several projects to reduce impact on the environment including avoiding disposable utensils and plates and replacing these with reusable items or those made of compostable materials, in addition LVSSR successfully mitigated landfill impact by switching to waste bags made with 80 percent recycled materials as well as sorting and recycling all waste produced by operations. LVSSR also replaced outdated water heaters with efficient Energy Star appliances, replaced all light bulbs with LED light bulbs, and provided incentives to its employees to encourage ride sharing and reduce the impact of emissions on the surrounding environment. A larger project was to decrease LVSSR's dependency on diesel generators. LVSSR installed a solar array and expanded battery storage primarily to run administrative buildings, overnight generators, and refrigerators without the use of generators. During the winter, LVSSR is able to run about 12 hours every day solely on solar energy which translates to a reduction in 428,072 pounds of CO<sub>2</sub> being released in to the atmosphere this winter alone. It also means that LVSSR will be able to run solely on solar energy the entire duration of the summer season.

**Mammoth & June Mountain – California**



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	7,817	Mammoth and June Mountain will reduce Greenhouse gas emissions per skier visit by 1 percent per year.
Scope 3 (solid waste)	0	
Total	7,817	

**REDUCE**

Mammoth and June Mountain implemented lighting retrofits in various locations throughout the ski area in addition to a company-wide initiative to replace all halogen bulbs, incandescent bulbs, and magnetic ballasts as they fail. They also purchased 19 low energy snowmaking guns.

**OTHER PROGRESS**

Mammoth and June Mountain have implemented the following programs to reduce their environmental footprint, provide environmental education, and promote habitat and resource conservation:

1. Diesel Particulate Filters have been added to 2 of our buses to help eliminate the Particulate Matter from the atmosphere.
2. MMSA implemented a significant amount of real time energy monitoring, adding meters on our snowmaking equipment along with several other meters throughout the company.
3. Idle Free Policy for all company vehicles.
4. Recycling – MMSA and JMSA recycle glass, cans, cardboard, paper, plastic, metal, used oil, batteries, bulbs, and computers.
  - a. SWAG (Sharing Warmth Around the Globe) – MMSA and JMSA donate old uniforms to SWAG to help provide warmth to countries in need.
  - b. Cell Phones for Soldiers – Employees are given the opportunity to donate and recycle any old cells phones to Military families overseas. This program helps support our Military along with keeping harmful materials out of landfills.

c. Purchase of Recycled materials whenever possible – Paper Products have a mix of recycled materials and are shipped using earth friendly practices. Trash liners are made with recycled plastics and Chemicals are Green Seal Certified.

6. Feet First – Mammoth Mountain works in conjuncture with the Town of Mammoth Lakes to offer a free bus system to both employees and guests.

a. Employees from the surrounding towns are offered carpooling options and a bus that provides them with transportation to the Mountain. These efforts help limit the emissions associated with gas burned.

**Mt Bachelor – Oregon**



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	3,651	Mt Bachelor will reduce emissions by 3,000 MTCO <sub>2</sub> e by 2015.
Scope 3 (solid waste)	148	
Total	3,799	

**REDUCE**  
Mt Bachelor installed a 5.6kw solar array and education center, began using bio diesel and implemented a recycling program.

**OTHER PROGRESS**

Mt. Bachelor offsets 100% of its electrical use with Renewable Energy Credits (RECs) from wind power. For the 2012-2013 fiscal year, Mt. Bachelor purchased 7,418,951 kWh of wind power RECs. Since 2005, Mt. Bachelor has purchased 45,182,395 kWh of wind energy. These RECs have offset the carbon footprint of the resort by 27,316 tons; equivalent to the annual greenhouse emissions from 5,163 cars. Mt. Bachelor offers a shuttle service from the city of Bend. This service reduced more than seven million pounds of greenhouse gases annually by decreasing the number of cars going to and from the resort. Shuttles diverted 1.7 million employee and guest vehicle miles annually from the road last season.

On-mountain recycling by employees and guests diverted 49 tons of garbage from area landfills in FY13. Other actions Mt. Bachelor takes to reduce the carbon footprint include using partially

recycled paper products in all restrooms, recycling containers in food service locations, use of wax-free recycled paper for insulated cups in food service areas, as well as remodeling of kitchen facilities to incorporate the use of china vs. paper products, using bulk container food items for kids ski school lunches, bulk cardboard recycling at retail from supplier packaging, reuse of existing signs and sign materials, use environmentally friendly cleaning agents for vehicles, retrofitting of lighting to low power devices as lights are replaced, electronic distribution and completion of the job application process to reduce paper consumption, use of non-petroleum based cleaners for housekeeping, and a no idling program for vehicles.

Mt. Bachelor also installed solar panels on the Nordic lodge in the fall of 2013. These solar panels to date have generated 1.65 mWh, which offsets their electricity usage. With the amount of solar power generated annually, Mt. Bachelor believes the Nordic lodge will be powered exclusively by solar during the 2014-2015 season.



**Mt. Hood Meadows – Oregon**

INVENTORY (calendar year 2014) Scope 1 and 2 (required)	MTCO <sub>2</sub> e	TARGET
Scope 3 (solid waste)	3,743	Mt. Hood Meadows will reduce overall emissions 6 percent below 2011 levels by 2020.
Total	159	
	3,902	

**REDUCE**  
Mt. Hood Meadows implemented lighting retrofit in the Alpenstube, Vertical North, Lift Maintenance, and North Lodge hallway.

**OTHER PROGRESS**

Mt. Hood Meadows recognizes its responsibility to address environmental concerns and has taken meaningful actions to reduce GHG emissions. By 2020, Mt. Hood Meadows expects to reduce overall GHG emissions by at least 6%, compared with 2011 emissions. Mt. Hood Meadows has been recognized for their efforts and are committed to encouraging the responsible use of resources and environmental stewardship.

Beyond their own operations, Mt. Hood Meadows supports elected officials who pursue responsible climate policy action which creates opportunities to reduce the negative impacts of climate change. While it is Mt. Hood Meadows’ policy to mitigate carbon emissions within its

operations, the company believes climate change must also be addressed through collaborative efforts and multi-stakeholder channels to be effective.

**Park City Mountain Resort & Gorgoza – Utah**



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	12,906	Park City Mountain Resort & Gorgoza will reduce emissions by 9,500 MTCO <sub>2</sub> e by 2014.
Scope 3 (solid waste)	306	
Total	13,212	

**REDUCE**

Park City Mountain Resort & Gorgoza upgraded to LED lights in the underground parking garage, installed a 38kw solar array, and began recycling and composting.



**Snowbird – Utah**

INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)		Snowbird Ski and Summer Resort will return to 2013-14 emissions levels by the year 2025 despite the addition of new facilities, lifts, and infrastructure and an expected increase in visitation.
Scope 3 (solid waste)		
Total		

**REDUCE**

Snowbird completed lighting upgrades in the Gate House and replaced some snow guns with more efficient models.

**OTHER PROGRESS**

Snowbird invested in a more robust employee transportation program to provide additional shared ride options.

## Squaw Valley & Alpine Meadows – California



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	11,220	Squaw Valley/Alpine Meadows will reduce emissions by 10% under 2014 levels by 2020.
Scope 3 (solid waste)	0	
Total	11,220	

### REDUCE

Squaw Valley | Alpine Meadows installed five new HKD SV10 high-efficiency Snowguns.

### OTHER PROGRESS

Last fall, Squaw Valley/Alpine Meadows released their first Environmental & Community Report to highlight recent energy efficiency and other environmentally focused projects, but the overall goal of this piece was to start the conversation about Climate Change with guests and staff. To further educate staff, Squaw | Alpine's Environmental Department conducted over twenty presentations at new employee orientations to inform new employees on how the local waste stream works and what materials can and cannot be recycled.

They also started looking outside of day-to-day operations. The first focus was the US Alpine Skiing Nationals in 2014. They purchased 245 tons of RECs to offset the athlete's travel, shipping and operations from this week long event. These certified RECs were allocated to an Organic Waste Digestion Project at a dairy farm in Merced, CA. To continue on this path, for the 2014 IRONMAN Lake Tahoe, Squaw Valley/Alpine Meadows worked with their organizers to eliminate all bottled water at the aid stations located within Olympic Valley, equipping each aid station with a 125-gallon Water Monster tank to provide water to athletes. Unfortunately the event was canceled due to wildfires. At Winter Wondergrass Festival in March, they worked closely with the organizers to make this event as 'green' as possible through utilizing the Water Tanks and setting up Zero Waste Stations.

Another resort-wide initiative to reduce energy consumption was switching out old thermostats with new, programmable ones--this has helped several buildings and departments set and manage their heat/air settings, instead of wasting energy by failing to manually adjust each day.

The largest capital investment in 2014 regarding the environment was our Red Dog Forest Health & Thinning Project. This project entailed removing dead and diseased timber from the Red Dog Area to help reduce the risk of wildfire by decreasing the tree density and eliminating "ladder fuels" that cause fires to reach beyond the forest floor into the treetops. Defective and diseased trees made up roughly 30-70% of this area, by thinning these trees it creates a healthier forest and combats drought, disease and invasive pests since plants no longer have to compete for resources. Upon the project's completion, 7,600,000 pounds of biomass material was generated.



**Steamboat – Colorado**

INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	15,736	Steamboat will reduce emissions by 5 percent under 2014 levels by 2020.
Scope 3 (solid waste)	444	
Total	16,180	

**REDUCE**

Steamboat installed the Christie Peak Express Maintenance Bay to be a multiple purpose facility for the lift department and ski patrol. It cuts down on gasoline use.

**Stratton - Vermont**



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	9,461	Undefined
Scope 3 (solid waste)	442	
Total	9,903	

**REDUCE**  
Undefined

**Sugarbush – Vermont**



INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	4,183	Sugarbush Resort will reduce emissions by 5 percent under fiscal year 2012 levels by 2015.
Scope 3 (solid waste)	222	
Total	4,405	

**REDUCE**  
Sugarbush completed snowmaking gun upgrades as well as Mount Ellen Lodge lighting upgrades.

**OTHER PROGRESS**

Sugarbush is entrusted with the stewardship of lands in the beautiful Green Mountains of Vermont. The resort promotes resource conservation, recycling, habitat protection, and environmental education. Sugarbush believes it has a responsibility to the community in that Sugarbush exists within a very special environment in the Mad River Valley. It is a responsibility to contribute to the economy of the Valley and be a good civic partner in promoting activities that enrich the community and preserve its special quality and natural environment.

Resource Conservation - In all Sugarbush Resort properties, the resort encourage guests and employees to help through recycling, purchasing goods produced with recycled content, turning out lights and electronics, and reusing towels and linens. The resort has initiated many lighting, motor and efficiency upgrades in our buildings and equipment, invested in highly efficient snowmaking technologies to maximize our snowmaking capabilities while reducing energy use

and continues to implement upgrades as new technologies become available. Sugarbush supports the Mad Bus, a free public transit system that provides winter bus service to the Mad River Valley to reduce demand for parking lots, wear and tear on our road networks, and to reduce transportation related air emissions.

In partnership with Efficiency Vermont (Vermont's energy efficiency utility that provides technical assistance and financial incentives to help Vermont households and businesses reduce their energy use and costs) since 2008, Sugarbush has implemented energy efficiency projects that have resulted in saving 1,990,142 kWh. Annually the resort recycles more than 112 tons of recyclable materials and over 2000 gallons of used motor and cooking oils, purchases 100% post-consumer recycled and sustainably sources paper and paper products whenever possible, buys eco-friendly cleaning supplies in bulk and has switched to a non-toxic parts washers for its vehicle and lift maintenance facilities.

Recycling - Sugarbush actively recycles and composts throughout the resort.

Habitat Protection - The resort strives to operate in harmony with the local wildlife with which the land is shared. This goal is reflected in a sensitive use of the Slide Brook Basin and the resort's timber management plans, water quality plans, and vegetation management plan. Sugarbush has an obligation to preserve the beauty of its natural environment and this means being responsible stewards of the land.

Environmental Education - Throughout its winter and summer program offerings Sugarbush has a variety of educational initiatives that emphasize local wildlife and conservation. These programs are available through special events provided by our partners such as the US Forest Service (USFS) and Vermont Institute of Natural Science (VINS) along with environmental curriculum woven into our summer camp programs and winter ski/ride and snowshoe programs. We host annual resort green up and commuter challenge events along with targeted invasive species control projects that engage employees in environmental efforts that demonstrate the importance of participation.

Employee Involvement - Through the Sugarbush Green Team, the resort is always looking for ways to improve resource conservation, recycling, habitat protection, and environmental education efforts. The Green Team is an employee run effort to identify and implement programs that benefit the natural, built, and human environments at Sugarbush Resort and the larger community.



## Telluride Ski Resort – Colorado

INVENTORY (fiscal year 2014)	MTCO <sub>2</sub> e	TARGET
Scope 1 and 2 (required)	8,381	Telluride will reduce emissions by 5 percent below 2011 levels by 2016.
Scope 3	0	
Total	8,381	

### REDUCE

Telluride implemented the following projects during the 2014 fiscal year:

- 1) Three phase lighting retrofit
- 2) Replaced they air-water snowmaking system
- 3) Upgraded snowmobile and ATV fleet with 4-stroke models.
- 4) De-rated snow cats
- 5) Began process of upgrading off-road vehicle fleet.

### OTHER PROGRESS

Telluride focused emissions reduction on two aspects of operations: electricity and fuel. We have begun making the switch to LED light bulbs and have invested in snowmaking technology. By replacing old air-water guns with more efficient ones, Telluride is able to create the same amount of snow with a significant reduction in energy. During the summer of 2014, modifications to the piping and distribution of water were made, utilizing gravity to pressurize the system and eliminate pumping for a portion of the snowmaking system. The second area of focus was upgrading snowmobile and other off road vehicles to 4-stroke models.

## **NEXT STEPS FOR THE CHALLENGE**

The Climate Challenge continues to grow with new Challengers entering and participating each year. There was implementation of the new advocacy requirement for Challengers, which required outreach to their congressional delegation and advocacy on climate change and energy legislation.

As always, the Challengers continued to collect data across their organizations, implement an emission reduction project, and many engaged management and staff in setting a reduction target. Meanwhile, the Challenge program has sought to provide the best support to Challengers as they undertake these tasks. Support from the Sustainable Slopes Grant Program to individual challengers has helped reduce carbon emissions as well.

As the Challenge enters its fifth year, Challengers and the program each will continue to seek to improve and grow. For example, there are 4 new Challengers participating in 2015, and one returning member. The quality of information collected for inventories will also continue to improve, awareness of the target will increase, and reduction projects will be a more integral aspect of the planning and budgeting process for Challengers. Additionally, Brengle Group will incorporate more advanced benchmarking into the program this year. This means Challengers will have the ability to track their emissions relative to the size of their operations, as opposed to just the total amount of their emissions. These are helpful metrics for Challengers to follow over time as the ski areas grow or operations change. This has the additional benefit of allowing Challengers to benchmark their operations with other Challengers, and improve recognition for activities.