

American Chemical Society National Meetings & Expositions

www.acs.org/greenermeetings

#ACSGreenerMeetings

2015 Sustainability Report

Carbon Footprinting 

Education & Engagement 

Partnerships for Progress 





ACS
Chemistry for Life[®]

Sustainability Report

2015

American Chemical Society Department of
Meetings & Expositions Services

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Message From our Committee CHAIRMAN



On behalf of the ACS Meetings & Expositions Committee, it is my pleasure to present the 2015 National Meetings and Expositions Sustainability Report, highlighting our programs, progress, and performance for the 249th and 250th ACS National Meetings held in Denver and Boston. This is our fifth year of publishing our sustainability report, continuing our commitment to the tracking and reporting of our event impacts and sharing our progress with you.

For our sustainable event work, ACS was highlighted in Convene Magazine's 2015 "Best Of Show" issue for Best CSR Initiatives, and received the 2014 Trade Show Executive's Gold 100 Grand Award for Show with the Most Commendable Green Initiatives. We humbly accept these accolades and are committed to continued leadership within the meetings and event industry.

In 2015, we continued to refine and promote our ACS Greener Meetings Pledge to encourage attendees to support our efforts. By making the pledge, attendees commit to five sustainable best practices while on site, such as taking advantage of hotel linen reuse programs, walking or taking the carbon-neutral shuttle and downloading the mobile app in lieu of using a printed program. In this second year of the program, 3,935 attendees pledged their commitment, showing us our members are passionate about sustainability.

This year also marked the second year of an ongoing partnership with American Forests, allowing us to indirectly offset a portion of the greenhouse gas emissions associated with our meetings. In 2015, ACS and its attendees funded the planting of 7,739 trees in Colorado and Oregon.

Looking ahead to 2016, the ACS Greener Meetings Team is excited to continue strengthening our program and further engaging our event partners, attendees and exhibitors. We are committed to collaboration and encouraging our partners to improve their operations beyond the duration of our meetings, helping create a lasting legacy in each host city.

We welcome feedback on this report and our programs, and look forward to continuing to catalyze the sustainable event movement.

A handwritten signature in black ink that reads "Will E. Lynch".

Sincerely,
Dr. Will E. Lynch
Chair, Committee on Meetings & Expositions, American Chemical Society
Dept. of Chem. & Physics, Armstrong Atlantic State University

ABOUT ACS



With more than 158,000 members, the American Chemical Society (ACS) is the world's largest scientific society and one of the world's leading sources of authoritative scientific information. A nonprofit organization, chartered by Congress, ACS is at the forefront of the evolving worldwide chemical enterprise and the premier professional home for chemists, chemical engineers and related professions around the globe.

OUR MISSION AND VISION

We are dynamic and visionary, committed to “improving people’s lives through the transforming power of chemistry.” This vision—developed and adopted by the ACS Board of Directors after broad consultation with the membership—fully complements the ACS Mission statement, which is “to advance the broader chemistry enterprise and its practitioners for the benefit of Earth and its people.” Together, these two statements represent our ultimate reason for being and provide a strategic framework for our efforts.

WE ARE LOCAL, NATIONAL AND GLOBAL

ACS has 187 local sections (chapters) throughout the United States. ACS offers members the opportunity to participate in 33 specialty divisions, ranging from food and agriculture to industrial and engineering chemistry. The Society's international membership exceeds 24,000 and represents more than 100 countries. More than 60 percent of the articles published in ACS journals and more than half of the material covered in the Society's Chemical Abstracts Service—the world's most comprehensive source of chemical and scientific information—originates outside the United States. ACS sponsors or promotes a number of international activities such as joint conferences with chemical societies in India and other countries, and the International Chemical Congress of Pacific Basin Societies (PacifiChem), a weeklong scientific meeting, held once every five years in conjunction with ACS counterparts in Australia, Canada, Japan, Korea, New Zealand and China.

WE SUPPORT REAL-WORLD INITIATIVES

ACS works to improve the world through other initiatives including:

- **ACS Green Chemistry Institute®:** promotes the implementation of green chemistry and engineering principles into all aspects of the chemical enterprise.
- **ACS Scholars Program:** provides underrepresented minority undergraduates with scholarship and mentoring support that they need to earn degrees in the chemical sciences.
- **Project SEED:** offers bright, economically disadvantaged high school students an opportunity to spend a summer conducting chemical laboratory research with the guidance of a chemical scientist.
- **Chemistry Teacher Education Coalition (CTEC):** supports the professional development of science teachers so that they can better present chemistry in the classroom and fosters the scientific curiosity of our nation's youth.

For information on becoming a member of ACS, please visit www.acs.org/join.

“ We are committed to sustainability at our headquarter offices located in Washington D.C. ACS achieved Platinum LEED-EB O&M for both the Othmer and Hach buildings in 2010 and 2011, respectively. We have also achieved Energy Star for 2013 for both Washington buildings and purchase 100% Renewable Energy Credits (RECs). ACS also added a 2,600 gallon irrigation tank that uses greywater to irrigate the landscape around the ACS building. ”



ACS Meetings & Exposition Management



ACS NATIONAL MEETINGS & EXPOSITIONS

The ACS National Meetings & Expositions are two of the most respected scientific meetings in the world, attracting nearly 27,000 chemical professionals in 2015. Attendees include chemical engineers, academicians, graduate and undergraduate students, and other related professionals. During the meetings, scientists present new multidisciplinary research and hear the latest information in their areas of professional interest. Each meeting features more than 7,000 presentations organized into technical symposia that highlight important research advances.

Furthermore, ACS National Meetings facilitate networking opportunities, career development and placement, and provide companies an opportunity to exhibit products and services to a targeted audience. Exhibitors showcase new technological developments, and a number of exhibitors offer free workshops to help attendees learn more about state-of-the-art technologies. Everyone who attends an ACS National Meeting & Exposition walks away with a greater understanding of the role chemistry plays in the global economy, health, safety, and the environment, and is given the unique opportunity to exchange ideas with leading experts in the field. For more information see our [Technical Programming Archive of Past National Meetings](#) since 2004.

ACS MEETINGS & EXPOSITION COMMITTEE

Meetings are governed by the Meetings & Expositions (M&E) Committee, which operated through four subcommittees in 2015:

- Operations
- Expositions
- Technical Programming
- Regional Meetings

Dr. Will E. Lynch was the 2015 Chair of the M&E Committee. Al Hutchins is the ACS Staff Liaison to the M&E Committee.

2015 ACS Council Committee On Meetings and Expositions

Dr. Will E. Lynch, Chair

Dr. Anthony W. Addison

Dr. Arindam Bose

Dr. Jetty L. Duffy-Matzner

Dr. Kevin J. Edgar

Dr. Emilio X. Esposito

Dr. Robert J. Hargrove

Dr. Lynn G. Hartshorn

Dr. Martha G. Hollomon

Mr. Warren D. Hull, Jr.

Dr. Silvia S. Jurisson

Dr. Abigail Kennedy

Dr. R. Daniel Libby

Dr. Christopher Masi

Dr. Martin D. Perry

Dr. John Pochan

Prof. Susan M. Schelble

Dr. Michael Singer

Dr. Mark Wicholas

Dr. Mark Benvenuto

Dr. Patrick Idwasi

Ms. Jackie J. O'Neil

Dr. Marina A. Petrukhina

Dr. D. Paul Rillema

Dr. Dawn A. Brooks



ACS GREENER MEETINGS TEAM

The Greener Meetings team was officially created in 2013 and includes staff members in key roles, including hotel engagement, convention center engagement and ACS marketing and communications. The team meets bi-monthly for program planning and group brainstorming.

2015 Greener Meetings Team Members

Vanessa Johnson-Evans, Manager, National Meetings Logistics, Attendees & Exhibitor Services

- Vernar Beatty, Senior Meeting Planner
- Evelyn Ciers, Lead Meeting Program Associate
- Kathleen Ford, Design & Communication Associate
- Amanda Frederick, Lead, Content & Expositions Associate
- Beverly Johnson-Hampton, Lead Meeting Planner
- Brenda Philpot, Lead Meeting Program Associate
- Nancy Todd, Manager, Meetings Contracts, Development & Planning
- Brittany Vesce-Rubenic, Senior Office Administrator
- Ryan Barth, Conference Direct, Global Account Executive
- Jenni Moon, Greenview, Consultant
- Cara Unterkofler, Greenview, Director



ACS Greener Meetings At A Glance

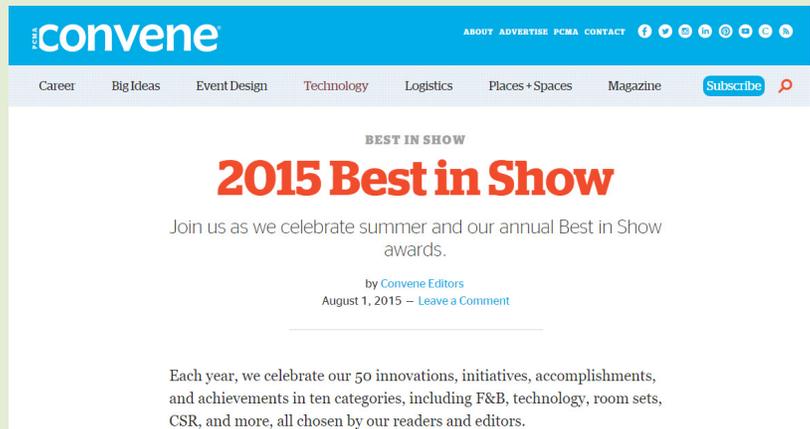


2014 TRADE SHOW EXECUTIVE'S GOLD 100 GRAND AWARD RECIPIENT FOR SHOW WITH THE MOST COMMENDABLE GREEN INITIATIVES

The Gold 100 Grand award is a prestigious industry award, recognizing the best of the best in trade show management.

CONVENE MAGAZINE'S 2015 ANNUAL BEST IN SHOW ISSUE FOR "BEST CSR INITIATIVES"

Convene Magazine's Best in Show issue highlights the best of the best within the events industry around innovations, initiatives, accomplishments and achievements across ten categories.

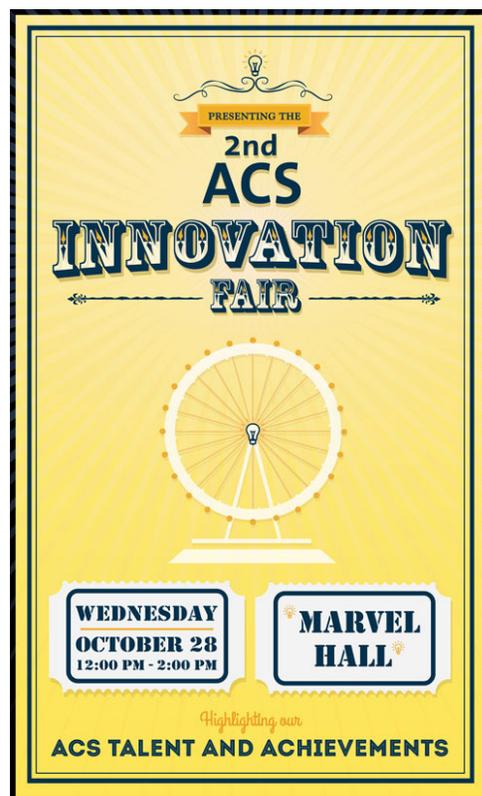


PCMA GREEN LEADER AWARD RECIPIENT

The ACS Department of Meetings & Expositions Services was awarded the 2011 and 2012 Green Leader Award from the Capital Chapter of the Professional Convention Management Association.

2015 PROGRESS AT A GLANCE

- 26,898 Attendees
- 12,513 Oral Presentations
- 6,943 Posters
- 10,087 MTCO₂e Carbon Footprint
- 3,375 MTCO₂e Offset
- 2nd year of American Forests Partnership
- 7,739 Trees Planted (over 9,000 to-date)
- 3,935 Greener Meeting Pledge Participants
- 2,244 names badges recycled (7,316 to-date)
- Highlighted in Convene Magazine's Annual Best in Show Issue for "Best CSR Initiatives"
- Greener Meetings Team Sustainability 101 Training Workshop
- Program promoted to all ACS staff at the 2nd Annual ACS Innovation Fair



ACS Greener Meetings



The American Chemical Society strives to reduce the environmental impacts of its National Meetings & Expositions while enhancing the positive impacts on communities locally and globally. Over the last five years, we have invested significant resources to developing our ACS Greener Meetings Program, which is focused on three key initiatives:



Calculating and Offsetting Our Carbon Footprint



Increasing Attendee Engagement



Collaborating with Event Partners to Improve Performance

Calculating and Offsetting Our Carbon Footprint

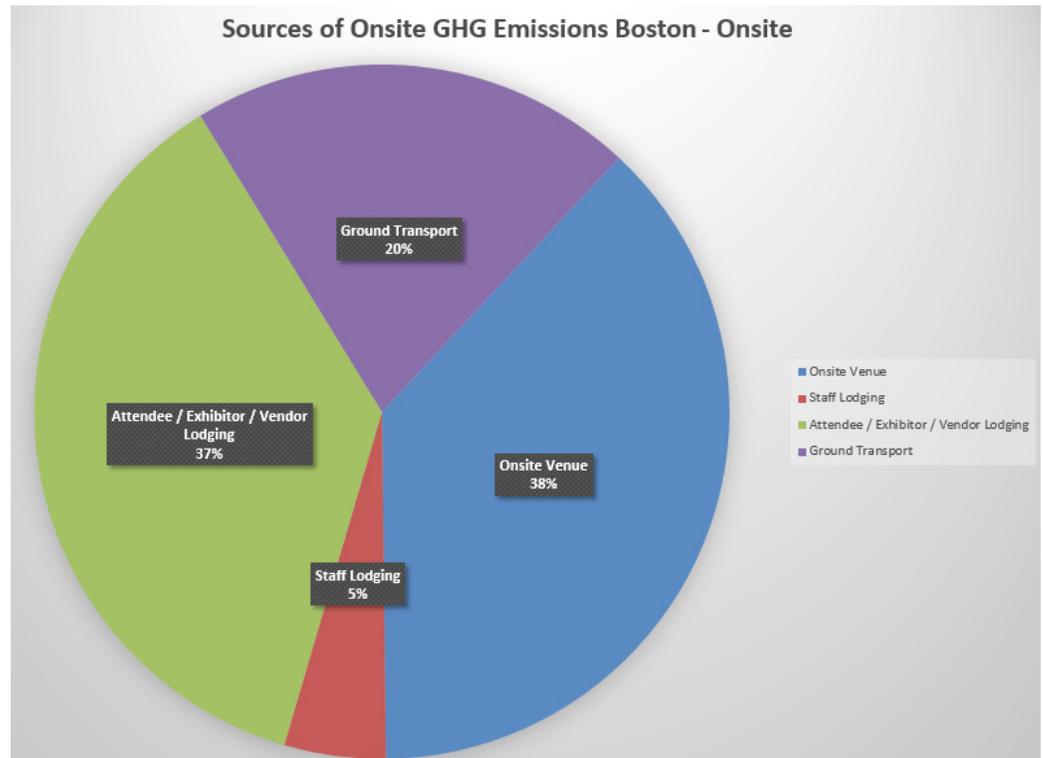
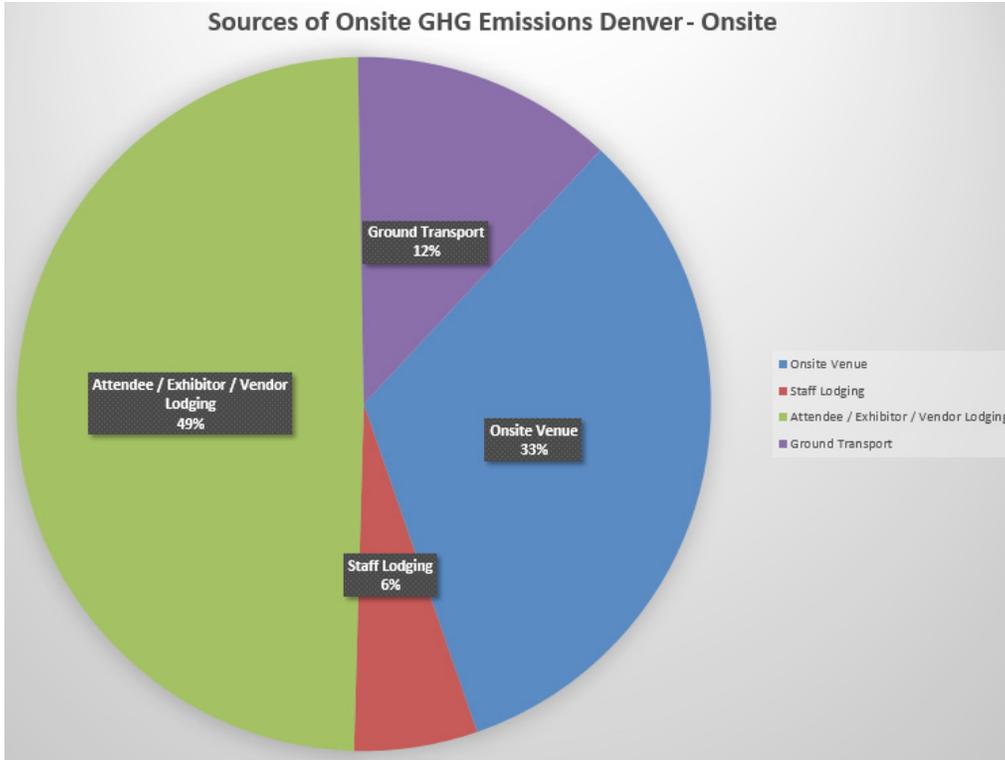
The largest source of GHG emissions from ACS National Meetings & Expositions, and key environmental event impact, is participant travel to the host destination, followed by accommodations and venue energy emissions. Decoration freight and ground transport (shuttles) are additional minor emissions sources for ACS meetings. Calculating event carbon footprints requires data collection and collaboration with vendors and other stakeholders, including:

- Surveying attendees and ACS staff to identify modes of transportation utilized to get to and from the destination, and within the destination
- Working with the convention centers to collect fuel and electricity usage during the event
- Working with event decorator, Freeman, to obtain the fuel usage from shipping of freight and use of freight vehicles (forklifts) onsite
- Working with hotel partners and Hotel Carbon Measurement Initiative (HCMI) data to obtain the carbon footprint of staff and attendee accommodations
- Working with shuttle partner, TMS, to obtain shuttle fuel usage

In alignment with the American Chemical Society's efforts to assist the non-scientific community in understanding climate science and the issues relevant to maintaining a safe climate, the Meetings & Expositions Services Department is committed to increasing awareness regarding the carbon impact of city-wide events among the meeting and event community. To do so, we continue to measure the carbon footprint of each of our National Meetings with the aim of continuous improvement around data collection techniques and calculation methodology.

Performance

The carbon footprint of the 249th & 250th ACS National Meeting & Exposition in Denver and Boston was 5,727.26 MT of CO₂e and 4,359.74 MT of CO₂e, respectively. The carbon footprint of the Boston event was smaller due to the emissions factors of that region being slightly lower compared to Denver affecting the venue energy footprint. In addition, the attendee hotel footprint was larger on a whole. Overall, the onsite breakdowns of the carbon footprint are relatively balanced and remains consistent in comparison with our historical data.



To help reduce the environmental impacts of ACS meetings, in 2015, ACS and its partners indirectly offset 3,375 MT of CO₂e, equivalent to:

Green house gas emission from



AMERICAN FORESTS
Protecting & Restoring Forests

In 2014, ACS began mitigating its carbon impact through an ongoing tree-planting partnership with American Forests. In 2015, the success of this program continues to blossom as ACS attendees are now offered an opportunity to donate \$1 toward their registration to plant a tree to indirectly offset their GHG emissions during each show. In 2015, 7,739 trees were planted through American Forests and over 9,000 trees have been planted since 2014.



For each meeting, ACS, in partnership with Transportation Management Services (TMS), offsets shuttle emissions through Carbonfund.org.



Project Name	West Fork Fire Complex Restoration ReLeaf Project
Location	Rio Grande National Forest, Colorado
Key Activities	Planting 75,500 Engelmann spruce across 255 acres and restoring areas affected by the 2013 West Fork Fire Complex and repopulating with native spruce species
ACS Carbon Offset	4,411 trees



Project Name	Prince Gulch Restoration Project
Location	Oregon
Key Activities	Planting of ponderosa pines, Douglas-fir, and other species along Yale Creek previous degraded by logging will help restore the neotropical migrant bird habitat of this region.
ACS Carbon Offset	3,328 trees planted



Challenges & Opportunities

Many challenges exist around measuring the carbon footprint of an event, especially because there is no industry standard methodology for doing so. Most challenges are related to data completeness (e.g., do you have the point of origin for every attendee in your registration data?) and accuracy (e.g., can the convention center provide natural gas use in 24-hr increments for the duration of your event?). In our experiences this year, we have found that some convention centers lack the systems or internal processes to provide data for a specific event. To reduce the risk of receiving poor data post-event, we include a discussion with the facilities and engineering team regarding our carbon measurement needs in a proactive pre-event site visit. We have found that with enough notice, centers can compensate for lack of more sophisticated systems by creating a plan to manually check energy and water meters to record usage for the duration of the show. In addition, we continue to face some challenges of receiving data from our event partners in a timely manner because this often happens after the meeting itself. In 2016, we will continue to work on engaging with those event partners to educate them on sustainability efforts of our program. We realize this is an ongoing effort that contributes to catalyzing the meetings & events industry as well.

Increasing Attendee Engagement

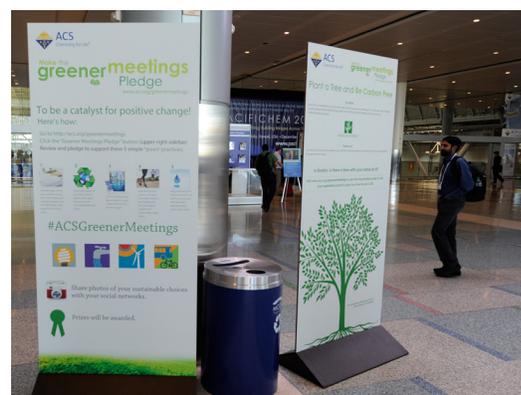
For the last two years, we have dedicated significant time and energy to consistently branding and increasing awareness of the ACS Greener Meetings Program through the Greener Meetings website, onsite signage (printed and digital) at the convention center and hotels, our printed meeting program, and our digital program and mobile app.

The Greener Meeting Pledge allows attendees to actively support our efforts through 5 easy sustainable actions, and continues to be our flagship attendee engagement initiative. In an effort to increase participation in 2015, attendees were able to make the pledge as part of the event registration process. Attendees were also given the opportunity to make the pledge onsite at the ACS Greener Meetings Booth inside the ACS Exposition.

In 2015, we strived to make our Greener Meetings messaging more fun and accessible by launching a program hashtag (#ACSGreenerMeetings) and engaging attendees at photo booth stations set-up throughout the conference. To create an additional channel, beyond surveying, for attendees to provide feedback we also created an email (greenermeetings@acs.org) so attendees can reach our team onsite and throughout the year.

Empowering Attendees to Offset Their Impact

For the first time in 2015, attendees were able to donate \$1 to American Forests to offset their carbon footprint. In 2015, ACS attendees helped plant 4,000 trees in Colorado and Oregon.





ACS Greener Meetings

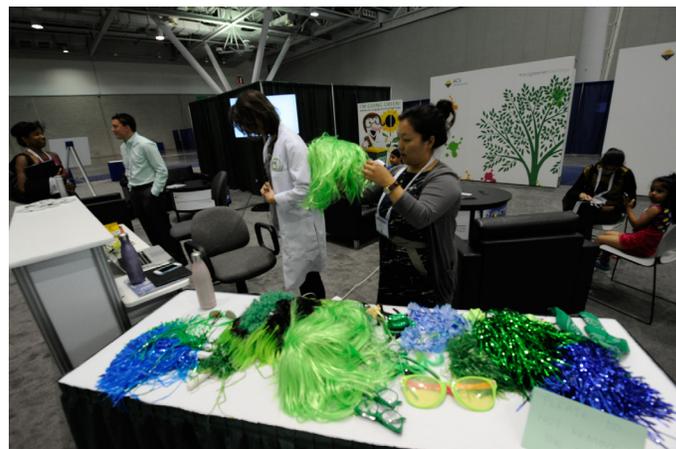


Performance

In 2015, over 3,935 attendees made the Greener Meetings Pledge. This is an astounding accomplishment compared to only 172 participants in 2014. Additionally, onsite engagement increased significantly with over 229 attendees visiting the Greener Meetings photo booth at the 250th ACS National Meeting National Meeting in Boston.

19 posts with the hashtag #ACSGreenerMeetings were posted and there were 3,094 unique visitors to the ACS Greener Meetings Website for 2015.

Pledge participants submitted their sustainability stories and the top 7 most impactful stories, ideas, or suggestions were awarded a S'well re-usable water bottle. The stories of the Boston Greener Meeting All-Stars can be read at www.acs.org/greenermeetings.



“

Molly Croteau

I'm a big fan of energy flow—I study the most basic unit of energy, electrons, and how metalloproteins can make these electrons travel around a cell. The ACS Boston national meeting was the place where I could enlighten other researchers and scientists about what I have been studying. As a New England native, I knew that Boston can sometimes become quite congested, due to its non-traditional city outline, and the flow of cars, trains, and people can slow enough to rival molasses on a typical New England winter day. For my 126 mile commute from Dartmouth College in Hanover, NH to Boston, I opted for the green method and took the coach bus to carpool with many others who also needed to get to Boston. Once in Boston, I trusted that all the relevant metalloproteins in the cells of my body were working in order to help me walk to get to the ACS national meeting. I came prepared with the ACS Boston app downloaded on my smartphone, so I could get up-to-date announcements, schedule changes, and locate all the speakers and seminars I wanted to attend. To re-energize the proteins in my cells, I ate lunch that I had packed that morning in re-usable tupperware containers and drank from my re-fillable water bottle. I spent my time in Boston at the ACS national meeting, found my way to Boston Common, China town, South Station, and the fish pier, all while reducing my carbon footprint for a better earth, and all while helping the flow of energy of the lives of every native and visiting Bostonian remain steady and true.

”

Greener Meeting Challenge



Denver Greener Meeting Challenge Winners!



First Place: Valerie Wolf



Second Place: Di Li

Third Place: Brittney Morgan

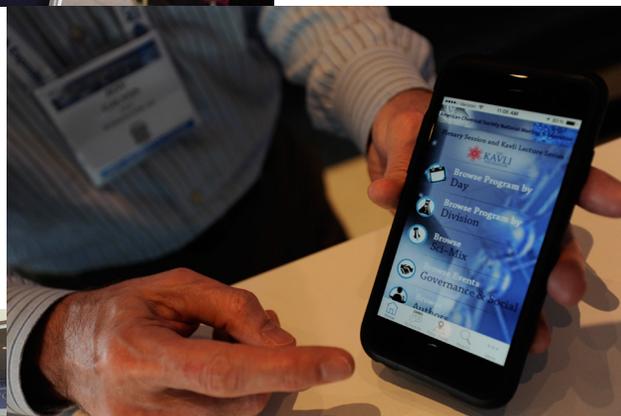


Fourth Place: Eric Rosa



Greening Up With Our Mobile App

In 2015, we had over 12,700 mobile app downloads. In an effort to reduce paper use, printing costs and shipping emissions, we continue to encourage attendees to use the mobile app as an alternative to the printed program. We also use the mobile app as a key communication channel to promote the Greener Meetings Program. To date, we have made a conscious effort to reduce printing whenever possible and have reduced our programs printed per attendee by 52% since 2011. Starting in 2016, we will be charging a nominal fee for the printed programs in which attendees can order.



Attendees believe it is important for the ACS to participate in green initiatives for its National Meeting & Exposition	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
249th Denver	54%	30%	12%	3%	1%
250th Boston	47%	37%	14%	2%	--

Attendees believe it is important for the ACS to pick 'green' venues for its National Meeting & Exposition	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
249th Denver	51%	28%	15%	4%	1%
250th Boston	38%	39%	19%	4%	1%

Attendees perception of the ACS National Meeting & Exposition as a socially responsible event	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
249th Denver	44%	41%	14%	1%	--
250th Boston	36%	45%	17%	1%	1%

Attendees perception of the ACS National Meeting & Exposition as an environmentally sustainable event	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
249th Denver	35%	40%	18%	5%	1%
250th Boston	28%	45%	17%	7%	2%

Attendees perception of the ACS as a leader in 'greening' its National Meeting & Exposition	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
249th Denver	34%	37%	25%	4%	--
250th Boston	26%	40%	28%	5%	1%

Challenges and Opportunities

In 2015, we faced the moral dilemma of figuring out the best ways to raise awareness of our programs while still being mindful of our environmental footprint of such efforts. We don't want to just give away free items to promote awareness but create unnecessary waste through t-shirts, buttons and other free giveaways. In fact, an attendee brought this to our attention by e-mailing us a personal note at greenermeetings@acs.org. The ways in which we have been most successful in growing our attendee engagement numbers have been through utilizing and leveraging existing technologies within our event management processes, such as integrating the ACS Greener Meetings Pledge with attendee registration.

Increasing attendee engagement continues to be an area of great challenge, but also an area of most improvement for us. To engage over 10,000 attendees at each show will be something we have to strategically maneuver, but we have invested in new systems and technologies for 2016 so that we can continue bringing awareness to sustainability in a creative and dynamic way. We have invested in a more efficient photo distribution system of our photo booth so that attendees can gain access to their photos and post on social media in real-time. We look forward to our journey in 2016 where attendees are more aware, engaged and conscious that we are doing our part to make their experiences a more sustainable event.

Collaborating with Event Partners to Improve Performance

For ACS National Meetings & Expositions, we define our stakeholders as those groups that impact and/or influence our events. The success of our national meetings would not be possible without the support of our event partners. A summary of our event partners and some of the ways they contribute to the Greener Meetings Program can be found in the appendix of this report.



Several of our vendors are SmartWay carriers, which ensures our show management and exhibitor shipments are as sustainable and low-impact as possible.

Convention Centers

For each National Meeting, ACS engages with key sustainability contacts at the convention center to collaborate on performance data tracking and attendee communication initiatives. This engagement is time consuming but critical, as it brings together stakeholders who might not normally collaborate to discuss challenges and find creative solutions for improvement. In every case, this increased communication leads to better performance results and increases awareness and education among stakeholders. Learning more about sustainable practices is advantageous to cities and centers, as practices and programs can be communicated to meeting planners as distinctive advantages of selecting that destination (something that will become more and more important over time).

Before each National Meeting, we communicate with each convention center so that we can:

- Track energy, water and waste data;
- Plan and execute a “zero waste” Sci-Mix event; and
- Create and promote local menus at the Attendee Welcome Reception.

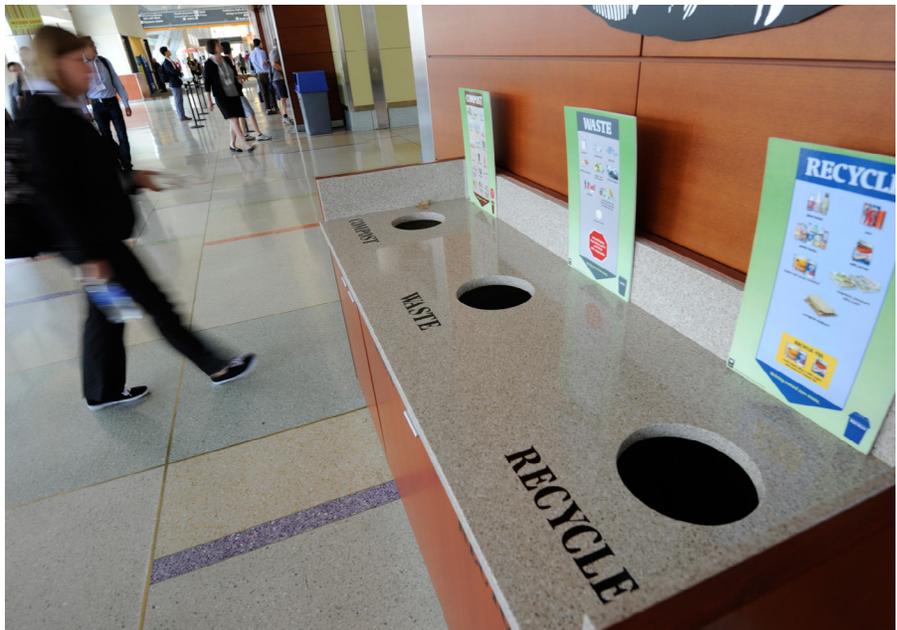




Waste management is key element of our work with the centers throughout the duration of our meeting. Our waste management program includes an emphasis on our “zero waste” event, Sci-Mix, which is held at each ACS National Meeting. The event is meant to engage attendees and increase awareness about waste generation as well as responsible disposal and landfill diversion.

Caterers

At each National Meeting & Exposition, ACS collaborates with the convention center catering partner to bring as many local produce items as possible to attendees at the Attendee Welcome Reception event in the expo hall. In Denver, 36% (by weight) of the food for the Attendee Welcome Reception was local (<250 miles). In Boston, the attendee welcome reception had only locally sourced beverages and minor food items, therefore we did not track the % of local items. However, the center’s caterers had several in-house programs, such as front of house composting in public areas.



Convention Visitors Bureau (CVB)

We work with each destination’s Convention and Visitors Bureau (CVB) to gather higher-level information about the city’s sustainability highlights. Additionally, we looked to our CVB partners to provide us with economic impact figures (the “profit” portion of the often referred to sustainability framework—“people, planet, profit”) as well as details related to local transportation options for attendees.

In 2015, we continued working with local CVBs more closely to help increase the responsiveness of hotel partners within the convention center package. Collaborating with the CVB not only brings a local hotel expert onto our green team, but provides an opportunity for the CVB to better understand sustainability within the context of their destination and how it can be promoted to attract progressive event organizers. Additionally, we have started engaging with the CVB for meetings that are happening in the following year, further engaging with our event partners on sustainability even more in advance to each meeting.

Hotel Partners

Our hotel engagement efforts center on collecting information about each hotel's sustainability practices in the destination cities we attend. In addition, onsite hotel walk throughs are conducted in each city. By way of these walk throughs, we continue to not only encourage hotels to increase their sustainability efforts, but validate and ensure said efforts. This year we performed walk throughs in 18 hotels that collectively represent 58% of the contracted room block in both Denver & Boston.

Conducting walk throughs of our hotel partner properties brings tremendous insight and value to our Greener Meetings Program. Hotel walk throughs are scheduled during the week leading up to the ACS meeting with various members of the sales, engineering and/or front office teams. Often, local best practices of hotel partners get shared through conversations with our hotel contacts. For instance, all of the practices we audit through our program align with Trip Advisor's Green Leaders program. We encourage hotels to pursue the Green Leaders distinction based on the practices we see onsite. In addition, by directly engaging with hotels onsite, we are able to notice innovative best practices within the industry. For instance, we were able to pilot an auto-enroll program in partnership with the Westin Denver & Sheraton Denver properties during our spring meeting in Denver. These properties participate in Starwood's Make A Green Choice program, where guests can opt-out of housekeeping services during their stay in exchange for \$5 food vouchers or guest reward points. As a result of this trial program, we were able to have 632 guests participate equaling over 1,319 roomnights.

Here are some of the key highlights of the types of priority practice data we collect from each hotel partner:

- **100% of hotels have a 3rd party sustainability certification**
- **82% of hotels have recycling on-site**
- **13% of hotels donate food to local food banks**
- **62% of hotels donate leftover soaps and bottled amenities to a charitable organization, either local or global**

In addition, onsite hotel walkthroughs are conducted in each city. By way of these walkthroughs, we continue to not only encourage hotels to increase their sustainability efforts, but validate and ensure said efforts. It shows the hotel industry how seriously we take our sustainability program, beyond just the duration of our meeting. We want our process to stir up conversations on property to pursue more initiatives in the future. For 2016 onward, we will continue to engage with hotels a year in advance to collect information on sustainability initiatives.

ACS Hotel Green Grid

In 2015, we introduced our first ever “hotel green grid,” allowing our attendees to see what types of sustainability initiatives are present within the hotels of the contracted room block. We believe in providing our attendees with information that will help them make more informed choices and rewarding hotel properties that are going above and beyond to provide a comfortable and sustainable guest experience.

CHEMISTRY OF NATURAL RESOURCES Denver, CO - March 22-26, 2015		Hotel Sustainability Green Grid 249th American Chemical Society National Meeting & Exposition											WWW.ACS.ORG/DENVER2015	
Hotel Name	Crowne Plaza Denver Downtown	The Curtis - a DoubleTree by Hilton	Denver Marriott City Center	Embassy Suites	Grand Hyatt Denver	Hampton Inn & Suites Denver/Downtown - Convention Center	Hilton Garden Inn Denver Downtown	Homewood Suites Denver Downtown-Convention Center	Hyatt Regency Denver at Colorado Convention Center	Magnolia Hotels Denver	Renaissance Denver Downtown City Center	The Ritz-Carlton, Denver	Sheraton Denver Downtown Hotel	The Westin Denver Downtown
Hotel's energy usage is tracked on a regular basis (at least quarterly)	YES	YES	N/A	YES	N/A	YES	N/A	YES	N/A	YES	YES	YES	YES	N/A
A towel/linen reuse program is in place	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
If yes, linens are changed every 3 days by default except upon guest request or check-out	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
A recycling plan is in place which recycles at least two type of waste	YES	YES	YES	YES	YES	YES	YES	YES	YES	N/A	YES	YES	YES	YES
At least 75% of lighting is energy efficient (LED or CFL) in guest rooms, public areas and back of house.	YES	YES	N/A	N/A	N/A	YES	N/A	YES	N/A	N/A	YES	N/A	N/A	N/A
Information is provided for guests on your property's green practices	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES
Newspapers are not delivered automatically to the guestrooms; but will be available in lobby or central guest floor areas when provided, unless part of a brand standard for preferred guests	N/A	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
Electronic (paperless) check-in and check-out is offered to the guest upon arrival or is the default practice (paper bills only provided upon request)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Carbon offsets or renewable energy certificates are purchased	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO
Please indicate Hotel's level of TripAdvisor GreenLeaders Label Designation (None, GreenPartner, Bronze, Silver, Gold, Platinum)	Bronze	N/A	N/A	N/A	N/A	N/A	N/A	Bronze	N/A	N/A	N/A	N/A	N/A	N/A
The hotel has achieved an additional sustainability label or certification such as Green Key, LEED, ISO 14001, ENERGY STAR, a national, provincial or state green lodging designation or another third party verified program and is currently in good standing with the program(s)	NO	NO	YES	YES	YES	NO	NO	NO	YES	NO	NO	NO	NO	NO

PARTICIPATING HOTEL LIST

For best availability, make your reservation via the internet <http://www.acs.org/denver2015> or by phone (866) 847-8570.

*All contracted ACS room rates include complimentary in-room internet access and fitness center access. Room rates below do not include the 14.75% room tax (subject to change).

** Additional Fees may apply: If a rollaway bed is required, if there are pets in guestrooms, and if smoking occurs in guestrooms (all rooms are non-smoking rooms)

*** Indicates hotel has a sustainability certification, such as Green Key, LEED, ISO 14001, ENERGY STAR, TripAdvisor GreenLeaders, or another third party verified program. For more hotel sustainability information please refer to the meeting website.

HOTELS	Room Rates*				**Max People per Room	No Charge for Children Under Age	Childcare List Available	ACS Shuttle Route	Parking Rate (per day)	Room Service	**Allow Pets	Pool	ADA Rooms	*** Green Cert.
	Single	Double	Triple	Quad										
1a. Crowne Plaza Denver Downtown – One Bed	\$200	\$200	N/A	N/A	2	17	No	No	\$25	Yes	Service	Yes	Yes	Yes
1b. Crowne Plaza Denver Downtown – Two Beds	\$210	\$210	\$220	\$230	4	17	No	No	\$25	Yes	Service	Yes	Yes	Yes
2. Embassy Suites Denver - Downtown Convention Center	\$204	\$219	\$234	\$249	4	17	No	No	\$33 valet	Yes	Service	Yes	Yes	Yes
3. Grand Hyatt Denver	\$229	\$229	\$254	\$279	4	12	Yes	Yes	\$33 Valet	Yes	Yes	Yes	Yes	Yes
4. Hampton Inn & Suites Denver Downtown-Convention Center	\$195	\$195	\$205	\$215	4	18	No	No	\$33 Valet	No	Service	Yes	Yes	No
5. Hilton Garden Inn Denver Downtown	\$189	\$189	\$199	\$209	4	18	No	No	\$33 Valet	Yes	Service	Yes	Yes	No
6. Homewood Suites Denver Downtown-Convention Center	\$205	\$205	\$215	\$225	4	18	No	No	\$33 Valet	No	Service	Yes	Yes	Yes
7. Hyatt Regency Denver at Colorado Convention Center	\$239	\$239	\$264	\$289	4	18	Yes	No	\$28/\$37	Yes	Service	Yes	Yes	Yes
8. Magnolia Hotel Denver	\$209	\$209	\$229	\$249	4	5	Yes	Yes	\$26 Valet	Yes	No	No	Yes	No
9a. Marriott City Center Denver – Standard Room	\$210	\$227	\$242	\$257	4	18	No	Yes	\$37 Valet	Yes	Service	Yes	Yes	Yes
9b. Marriott City Center Denver – Concierge Room	\$241	\$260	\$275	\$290	4	18	No	Yes	\$37 Valet	Yes	Service	Yes	Yes	Yes
10. Renaissance Downtown Denver City Center	\$207	\$217	\$227	\$237	4	18	No	Yes	\$35 Valet	Yes	Service	No	Yes	No
11. Sheraton Denver Downtown Hotel	\$205	\$205	\$220	\$235	4	18	No	Yes	\$29/\$39	Yes	Yes	Yes	Yes	No

Vendors

All vendors are asked to update their policies on their own sustainability efforts and how they support ACS's commitment to sustainable meetings as a vendor. Most vendors whose operations require shipping of equipment and materials to the show use carriers participating in the EPA Smart Way program. Vendors utilizing Smart Way carriers include Freeman, Airways Event Freight Group, and Trade show Multimedia Inc., and almost all vendors utilized reusable shipping containers and padding.

For both 2015 National Meetings, ACS worked closely with general contractor, Freeman, to better understand show impacts and how they can be reduced. Examples of components of the show that were identified and tracked include:

- Emissions from freight fuel burning associated with shipping meeting equipment and decorations (e.g., registration counters, piping, draping, chairs, carpet, etc.)
- Carpet and carpet padding (ft.2 used/returned to inventory/disposed on site)
- Graphics (type of substrate, ft.2 used/returned to inventory/recycled on site)
- Freeman staff travel mode and miles (fuel emissions)

This tracking allowed the ACS to measure the results of its efforts to reduce printed signage as well as track the % of signage printed on ecoboard—a recyclable substrate made from a minimum of 20% post-consumer recycled materials. Ecoboard is made from Sustainable Forestry Initiative (SFI) certified fibers, is produced chlorofluorocarbon-free, and emits no VOCs during manufacturing. In 2015, ACS produced 26,964 Ft2 of graphics (signage specifically printed for use at ACS shows), 46.5% of which was printed on ecoboard.

We would like to acknowledge that the ACS Greener Meetings Program would not be possible without the support and collaboration of our vendor partners.



249th ACS National Meeting & Exposition: Denver, CO



Show Stats & Meeting Info

- Attendees: 13,469
- Exhibitors: 363
- Vendors: 163
- ACS Staff: 489
- Total Presentations: 6,415
- Total Posters Presented: 3,951
- Economic Value Generated: \$19 Million
- Total GHG Emissions Onsite (MTCO_{2e}): 5,727.26
- Total GHG Emissions of Hotel Room Block (MTCO_{2e}): 708

Economic Impact

Using the DMAI Economic Impact Calculator, it is estimated that the 249th ACS National Meeting & Exposition directly generated \$19M in value for the city of Denver, including over \$2.4M paid in local taxes and over 6,912 jobs supported. Total hotel room nights generated equaled 20,998.

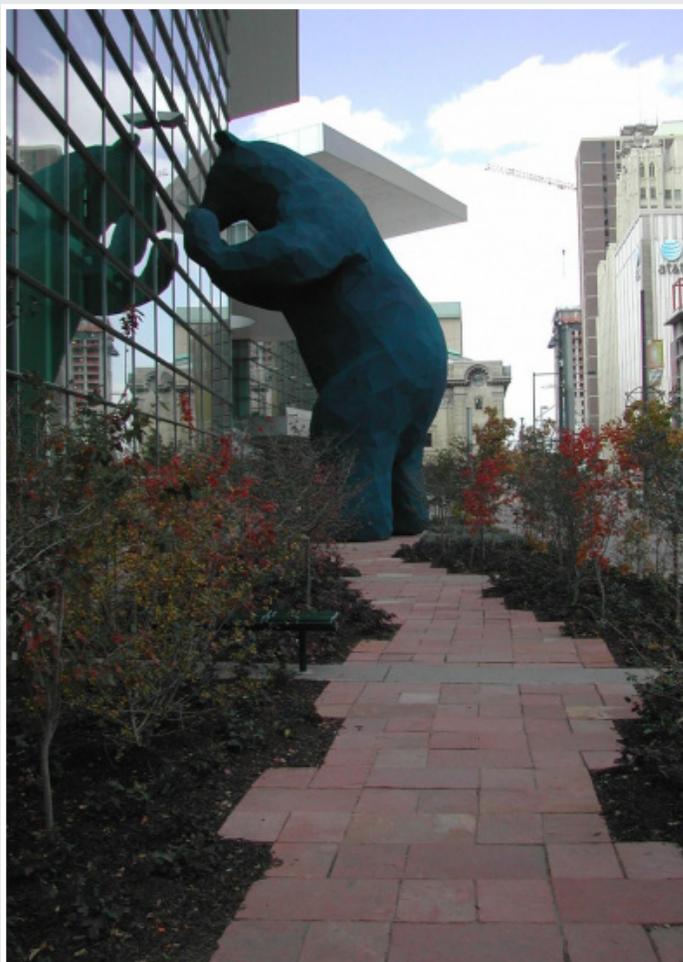
Environmental Impact

Total Energy Usage (kWh, main venue only)	490,800
% Renewable Energy Usage (main venue only)	28%
Total Water Usage (gal)	470,725
Total Waste Generation (Tons)	11.01
Diversion Rate	73%
Total GHG Emissions (MTCO _{2e})	5,727.26

Colorado Convention Center

The Colorado Convention Center is committed to green operations. As one of the most recognized sustainable convention centers in the US, the center's sustainability practices include:

- Venus is ASTM Environmentally Sustainable Meetings, Events, Trade Shows, and Conferences (E2774-11). First venue to achieve this certification.
- Has a 300kw rooftop solar panel.
- LEED Gold Certification for Existing Building Operations and Maintenance
- Partners with "We Don't Waste" to donate leftover food



250th ACS National Meeting & Exposition: Boston, MA



Show Stats & Meeting Info

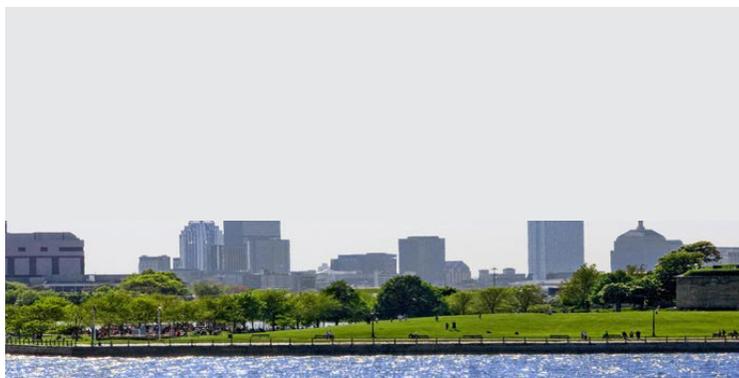
- Attendees: 13,400
- Exhibitors: 329
- Vendors: 169
- ACS Staff: 528
- Total Presentations: 6,098
- Total Posters Presented: 2,991
- Economic Value Generated: \$34.12
- Total GHG Emissions Onsite (MTCO₂e): 4,359.74
- Total GHG Emissions of Hotel Room Block (MTCO₂e): 460

Economic Impact

Using the DMAI Economic Impact Calculator, it is estimated that the 250th ACS National Meeting & Exposition directly generated \$34.12M in value for the city of Boston, including over \$700,000 paid in local taxes and over 6,296 jobs supported. Total hotel room nights generated 20,534

Environmental Impact

Total Energy Usage (kWh, main venue only)	1,865,833
% Renewable Energy Usage (main venue only)	0%
Total Water Usage (gal)	49,143,600
Total Waste Generation (Tons)	31.41
Diversion Rate	48.6%
Total GHG Emissions Onsite (MT-CO ₂ e)	4,359.74



Boston CVB Donates \$400 to Boston Public Schools

- Signature Boston donated \$400 to the Science Departments of Boston Public School in honor for ACS's 250th National Meeting & Exposition in August 2015.
- Signature Boston has a strong history with supporting sustainability and community outreach programs, learn more about their programs here: <http://signatureboston.com/services/social-responsibility.aspx>

Looking Ahead



2016 OUTLOOK

This year was full of continuous improvement to our existing sustainability program while simultaneously focusing our efforts to engage attendee participation in our Greener Meetings Pledge. For 2016, we have identified several opportunities for the two ACS National Meetings & Expositions in San Diego and Philadelphia. We look to tackle some of the following Greener Meetings initiatives:

Engagement with Event Stakeholders	Increase lead-time and communication with hotels to increase responsiveness, program adoption and collected data quality a year in advance
	Strive to incorporate hotel “green practices grid” for attendee reference on housing registration page a year in advance
	Increase participation of Greener Meetings Pledge
	Increase promotion of Greener Meetings Pledge on social media
Programs	Increase staff education and participation in the Greener Meetings Pledge
	Work with Trip Advisor Green Leader’s program to promote hotel participation
Carbon Offsets	Continue offsetting program with American Forests
	Increase attendee offsetting participation with each show to help mitigate footprint related to attendee travel

We always aim to create longer-term, more significant change within the destinations and venues we visit. We recognize this is a work in progress and hope our 2016 challenges and opportunities will bring us a few steps closer towards achieving our mission of ACS Greener Meetings.

2016 ACS National Meetings & Expositions

Spring 2016: 251st National Meeting & Exposition

Computers in Chemistry
March 13-17, 2016
San Diego, CA

Fall 2016: 252nd National Meeting & Exposition

Chemistry of the People, by the People, and for the People
August 21-25, 2016
Philadelphia, PA

For more information, visit the ACS Meetings Website at www.acs.org/meetings

PERFORMANCE DATA



		Denver	Boston	
	2014 Total	2015	2015	2015 Total
Event Stats				
Total Attendees	29,468	13,469	13,400	26,869
Total Exhibitors	531	240	429	669
Total Exhibition Sqft	Not Tracked	161,450	258,000	419,450
Total Participants	29,999	14,361	14,526	28,887
Impact				
# of Attendees Greener Meetings Pledge	172	58	3,877	3,935
# of Trees Planted (Attendee Donation)	N/A	2,146	1,867	4,013
# of Trees Planted (ACS Donation)	1,347	2,265	1,461	3,726
Total # of Trees Planted	1,347	4,411	3,328	7,739
Economic				
Total Economic Value Generated (\$M)	\$56	\$19,033,198	\$34,129,463	\$53,162,661
Hotel Room Nights	49457	20998	20534	\$41,532
Jobs Supported	13,451	6,912	6,296	\$13,208
Energy				
% Renewable Energy Use (Venue)	100%	28%	0%	28%
Total Energy Use (kWh)	1,914,444	798,778	2,055,284	2,854,062
Energy Use Per Participant (kWh)	66.18	55.62	141.49	98.56
Energy Per Sqft Exhibition Space (kWh)	Not Tracked	4.95	7.97	6.46
GHG Emissions (MT CO2e)				
Total GHG Emissions	7415.49	5727.26	4359.74	10087.00
GHG Emissions Per Attendee	0.25	0.40	0.30	0.35
GHG Emissions Per Sqft Exhibition Space	Not Tracked	0.04	0.02	0.03

Carbon Offset (MT CO2e)

ACS Offset	Not Tracked	935.0	603.20	1538.2
ACS Partners Offset	Not Tracked	45.5	135.50	181.0
ACS Attendees Offset	Not Tracked	885.8	770.60	1656.4
Total Offset	Not Tracked	1866.3	1509	3375.6
% of Carbon Footprint Offset	Not Tracked	33%	34%	33%

Water

Venue Water Use (gal)	2,016,376	470,725	49,143,600	49,614,325
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Waste

Venue Total Waste Generated (tons)	56.65	11.01	31.41	42.42
Venue Recycled Waste (tons)	180.67	5.06	15.26	20.32
Venue Composted Waste (tons)	4.24	3	3.68	6.68
Venue Landfilled Waste (tons)	29.7	2.95	16.15	19.10
Venue Waste Diversion Rate (%)	47%	73.2%	48.6%	60.9%
Facility Average Diversion Rate (%)	Data Unavailable	Data Unavailable	Data Unavailable	-
Variance from Facility Average (%)	Data Unavailable	Data Unavailable	Data Unavailable	-

Printing & Materials

Total Programs Printed	21,417	6,500	6,753	13,253
Programs Printed Per Attendee	0.73	0.48	0.50	0.49
Mobile App Downloads	Not Tracked	6734	6030	12764
Badges Returned For Reuse	1759	1018	1226	2244
Signage Produced (sq ft)	34,305	16,127	10,837	26,964
Sustainable Signage Used (%)	70%	35%	58%	47%



	Denver	Boston
Hotels	2015	2015
% of hotels that participated in an on-site sustainability audit	71%	47%
# of hotel surveyed	14	17
% of hotels with a sustainability label or certification such as TripAdvisor GreenLeaders program, Green Key, LEED, ISO 14001, ENERGY STAR, a national, provincial or state green lodging designation or another third party verified program and is currently in good standing with the program(s)	29%	88%
% of hotels with recycling	64%	100%
% of hotels with composting	57%	50%
% of hotels that donate food to local food banks	Not Tracked	13%
% of hotels that donate leftover soaps and amenities	86%	38%
Survey Results (Strongly Agree & Agree)		
Attendees believe it is important for the ACS to participate in green initiatives for its National Meetings & Expositions	84%	84%
Attendees believe it is important for the ACS to pick 'green' venues for its National Meetings & Expositions	79%	77%
Attendees perception of the National Meetings & Expositions as an environmentally sustainable event	75%	73%
Attendees perception of the ACS as a leader in 'greening' its National Meetings & Expositions	71%	66%
How familiar were you with the Greener Meeting Challenge? (Somewhat familiar & Very Familiar)	44%	58%



APPENDIX – GREENHOUSE GAS CALCULATION METHODS



DEFINITION OF SCOPE AND BOUNDARY

GHG emissions resulting from an event such as the ACS National Meetings & Expositions are subjectively determined, given all the components that happen during an event which is organized by an association outside the local destination, and contracts all its services to providers such as the convention center and its vendors. In addition, emissions from attendee air travel to the location and other Scope 3 emissions will represent the vast majority of emissions. ACS worked to define its boundaries of scope for the national events as presented in this report. They are as follows:

Included Scope 1 and 2 Emissions: Direct GHG emissions resulting from either burning fuels on site or purchasing energy in facilities that are owned or controlled by the reporting entity. In the case of large events, it is interpreted that meeting venue spaces and ground shuttles are proportionately controlled by ACS during the contracted hours of use:

- **Convention Center (heating and cooling, lighting, and on-site vehicles used)**
- **Hotel meeting rooms (heating and cooling and lighting associated with contracted meeting space. These are currently not tracked.)**
- **Ground Shuttles within the destination (fuel from ACS-contracted shuttles)**

Included Scope 3 Emissions: Indirect emissions occurring upstream and downstream of the event and its suppliers. In the case of events, we have determined 3 types of Scope 3 emissions and included them in the boundaries of GHG emissions calculation:

- A. Organizer Scope 3 Emissions: those emissions resulting from activities undertaken by the organizer and its staff or contracted directly by the organizer for the event, including:**
 - a. Staff transportation to the destination (fuel consumed for flights, trains and cars)
 - b. Staff ground transportation within the destination city that is not contracted, but undertaken by ACS (fuel consumed for cars, taxis, buses, trains etc.)
 - c. Staff hotel guest rooms
 - d. Event signage and decorations freight (fuels associated with shipping ACS equipment and decorations)
- B. Vendor Scope 3 Emissions: those emissions resulting from activities that are undertaken by contracted vendors, including:**
 - a. Vendor travel to the destination city
 - b. Vendor ground transportation within the destination city
 - c. Vendor hotel guestrooms within the contracted room block
 - d. Vendor freight (those aside from ACS or exhibitor freight)
 - e. Vendor operations (those aside from the center or hotel emissions already accounted for in Scope 1)

C. Attendee & Exhibitor Scope 3 Emissions: those emissions resulting from activities of attendees and exhibitors, including:

- a. Attendee/Exhibitor travel to the destination city (fuel consumed for flights, trains and cars)
- b. Attendee/Exhibitor ground transportation within the destination city
- c. Attendee/Exhibitor hotel guest rooms within the contracted room block
- d. Exhibitor freight to the advance warehouse or directly to the meeting venue

OTHER SCOPE 3 EMISSIONS NOT INCLUDED IN THE BOUNDARY:

In a full analysis of an event, it is clear that other activities result in emissions. However, the emissions outlined above reflect the boundaries that are generally set for the purposes of event tracking and reporting. Some examples of emissions not included above are:

- Downstream emissions from waste disposal (convention center and hotels)
- Upstream emissions from food and beverage production and transportation
- Upstream emissions from the production of show equipment, materials and signage
- Emissions from ACS vendors outsourcing to other vendors
- Emissions from hotel room nights booked outside the contracted room block (but evident from the economic impact calculations)

GREENHOUSE GAS EMISSIONS CALCULATIONS

- Emission factors for venue electricity were obtained from EPA eGRID version 2012 for each convention center.
- Emission factors for stationary combustion of natural gas at the venues was obtained from the World Resources Institute using a factor of 5.30251 kg CO₂e/therm.
- Emission factors for mobile combustion of diesel fuel from transportation were obtained from the vendor, which uses an emission factor of 10.15 kg CO₂e per gallon of fuel burned.
- Ground transportation emissions we calculated per the guidelines in “Optional Emissions from Commuting, Business Travel and Public Transport” from the EPA Climate Leaders
- Air Transportation Emissions were calculated using an estimated average roundtrip flight of 700 miles for air travel at a rate of .233346 kgCO₂e per passenger-kilometer,
- Carbon figures from hotels obtained either from final metrics provided by the hotels in the room block, or the median value per market presented in the Hotel Sustainability Benchmark Working Paper, Cornell Center for Real Estate Finance, January 2014.

APPENDIX: EVENT PARTNERS



Airways Freight is a Smart Way Transportation Partner through the U. S. Environmental Protection Agency (EPA) and has the highest rating provided by Smart Way. Additionally, Airways Freight practices energy saving techniques, which include use of low rolling resistance tires, low sulfur diesel fuel, auto shutdown/ startup engines, aerodynamic technologies, and verified retrofit technologies.

Trade show Multimedia Inc (TMI) provides only recycled paper for attendee printing at “Meeting Mail” terminals. Attendees have alternatives to printing all together with the option to email important conference documents. TMI ships equipment in reusable and lightweight crates to minimize fuel consumption, and uses EPA Smart Way.

Orchid Event Solutions LLC and Passkey’s Group Max system provides clients with an environmentally friendly housing technology that reduces the need for paper. Planners and hotels can login virtually to manage their event and track reservation pace, provide group and individual hotel pick-up, and access other reports as desired. These features reduce resource consumption and save time and money for event organizers, exhibitors, attendee and hotels.

Transportation Management Services (TMS) has partnered with Carbonfund.org to create an innovative Carbon Offset Shuttle Program that provides a neutral carbon footprint from ground transportation. The TMS Carbon Offset Shuttle Program manages and computes the logistical on-site shuttle information and creates a post-show tally of the number of gallons of diesel each bus burned along with the number of numeric tons each bus emitted. TMS was awarded by Alliance for Workplace Excellence with the Eco Leadership award in 2011 as a company that shows commitment to environmental sustainability. The TMS corporate office has a “vegetated roof”, limiting energy waste by reducing heating and cooling loads on the building. TMS’s “vegetated roof” also reduces pollutants in rainwater and the air.

Projection To assist clients with their sustainability efforts, Projection purchases the latest “Energy Star” rated electronic technology available. Projection sends older equipment to the proper recycling facilities. Projection is reducing its carbon footprint by limiting the number of tractor trailer trucks needed for a large conference by securely packing items in lighter and fewer containers. Local equipment resources for lighting and staging items are used when possible. Projection participates in several paper and cardboard recycling programs, which support local charitable organizations in Maryland.

Convention Data Services encourages clients to ‘go green’ by offering products and services such as renewable and recyclable badge stock and holders, electronic badge will call, electronic session tracking, reusable lanyards, online surveys and CME/CEU certifications, and electronic reporting.

Freeman utilizes reusable equipment and packaging for equipment, recycling both at show site and in its facilities. Highlighting earth friendly tips and materials in service kits. Using direct print method for signage on substrates that contain recycled content and are 100% recyclable, sourcing local labor. Freeman is a Smart way Transport Partner and has idle reduction guidelines.

Questions about this report may be directed to:

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