

sustainability at BPA 2013

SMALL STEPS
big difference





LETTER FROM **hairston**



THIS WAS AN EXCELLENT YEAR for sustainability at BPA. We discovered creative new ways to reduce the amount of energy and materials we consume. Individual employees suggested and incorporated sustainable practices into work processes. Their commitment to reducing our environmental footprint is an inspiration.

In addition to minimizing our environmental footprint, many of the accomplishments also resulted in financial savings that help keep rates low for our customers. We definitely advanced BPA's sustainability program. This year we realized more than \$639,000 in documented savings as compared to 2012 where our sustainability programs saved us \$494,000. The cost of office supplies alone was reduced by \$288,000 this year. Part of this savings was a 14% reduction in the consumption of paper and toner. The implementation of several new sustainability policies and the emphasis on cross-organizational efforts will help us continue to see increased savings in future years.

In 2013, we continued to build upon established targets. Our major targets included:

- Energy reduction;
- Water reduction;
- Indexed key sustainability initiatives;
- Fuel efficiency;
- Agency policy on sustainability; and
- Employee engagement

This report provides an inside look at some individual projects that delivered specific results. It also includes a scorecard that tracks our overall results for the last several years.

I am proud of our sustainability efforts and the dedication that all of our employees have for being good stewards for the environment and saving ratepayer dollars.

John L. Hairston
ACTING VICE PRESIDENT, INTERNAL BUSINESS SERVICES

2013 Sustainability Scorecard

CATEGORY	UNITS	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	% CHANGE FROM BASELINE
SCOPE 1 - FUGITIVE EMISSIONS							
SF6	LBS			6,473	4,302	7,076	+ 9.3%
SCOPE 1 - PETROLEUM FUEL USE							
Aviation Fuel Consumption	GALLONS			124,902	161,570	123,884	- 0.8%
Gasoline Consumption	GALLONS		749,206	815,318	767,974	740,265	- 1.2%
Diesel Consumption	GALLONS		264,754	306,646	382,734	299,212	+ 13.0%
SCOPE 1 - ALTERNATIVE FUEL USE							
E85 Consumption	GALLONS		33,292	28,571	25,588	27,719	- 16.7%
BD20 Consumption	GALLONS		27,893	25,253	48,777	92,303	+ 230.9%
Propane Consumption	GALLONS		680	875	757	743	+ 9.3%
SCOPE 1 - HEATING							
Natural Gas Consumption	THERMS			138,999	153,350	148,543	+ 6.9%
SCOPE 2 - ELECTRICITY							
Electricity Consumption	KWH			109,390,554	111,998,723	110,902,281	- 3.2%
SCOPE 3 - WASTE							
Waste to Landfill	TONS			983	940	774	- 21.3%
Waste Diverted	TONS			975	1,225	1,808	+ 85.5%
SCOPE 3 - WATER							
Water	GALLONS	38,611,901	38,081,833	37,368,833	34,120,473	31,703,697	- 17.9%
SCOPE 3 - PAPER CONSUMPTION							
Paper Consumption (total)	REAMS	45,597	46,373	41,875	39,545	36,828	- 19.2%
SCOPE 3 - BUSINESS RELATED TRAVEL							
Employee Commuting - Driving	MILES		27,784,673		28,279,247	40,130,579	+ 44.4%
Employee Commuting - Alternative	MILES		4,080,932		5,071,465	5,227,872	+ 28.1%
Business Air Travel	MILES		6,826,926		5,783,350	6,269,171	- 8.2%
Business Car Rental	MILES		618,660		651,210	685,650	+ 10.8%



YEAR IN **review**

THIS IS THE THIRD YEAR BPA has reported on sustainability program accomplishments. The report provides an opportunity to review progress made on sustainability initiatives, evaluate how far we have come and how much we can improve. The program has demonstrated maturation as the concepts of sustainability and resource conservation are communicated and understood.

The sustainability program started as an employee-driven “grass roots” effort in 2010. Sustainability is becoming a consideration in how work is performed. The establishment of several policies supporting sustainability efforts proves the positive progress being made.

In 2009, BPA became a founder and member of The Climate Registry, a nonprofit collaboration that sets standards to calculate, verify and report greenhouse gas emissions. This year, BPA completed and published our Greenhouse Gas inventory for the years of 2009, 2010 and 2011. The 2012 inventory is currently in the process of third-party verification and scheduled for public release in January 2014. These inventories provide a concrete measure of the progress we are making.

The table on page 5 illustrates the cost savings actually realized by sustainability actions taken this year and the organizations responsible for the savings.

FY 2013 Sustainability Cost Savings

ORGANIZATION(S) RESPONSIBLE	SUSTAINABILITY INITIATIVE	GROSS COST SAVINGS ACHIEVED
NWP/NWF	NEEA'S Kilowatt Crackdown competition	\$34,000
NWP	Verification services for Greenhouse Gas Inventory for The Climate Registry	82,863
NWM	Custer water bill correction	25,383
NWM/TELD	Custer MHQ lighting retrofit	3,464
NWM/TELD	Custer CH HVAC upgrade, envelope improvement and lighting retrofit	10,413
NWM	Ross Complex lighting upgrades	2,535
NWM	Fixed leaks at Shelton, Sickler, Covington and Bell	10,085
NS	Fossil fuel reduction	183,058
NWP	Office supply re-use and reduction	287,991
	TOTAL	\$639,792

TECHNICAL improvements

Work Solutions Brings the Workplace of the Future to BPA

This future-focused project was launched in 2012 and the initial pilot implemented this summer. Approximately 100 workspaces in the Human Capital Management group were reconfigured. Glass partitions were maximized to increase natural light. The pilot used furniture made from 40% recycled materials and chairs that are 95% recyclable.



The pilot has saved about 2,856 square feet of space which results in decreased energy demands.

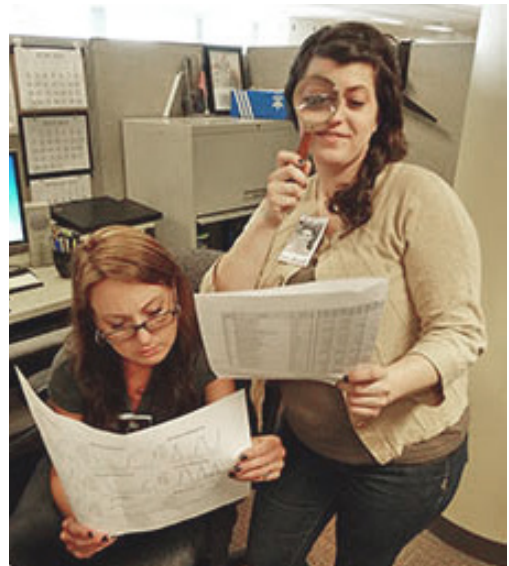
Employees are trying out new touch-down stations, shared workstations and focus rooms that provide co-workers a quiet space to collaborate.

Water Sleuths Find Leaks

Each month BPA receives nearly 60 different water bills from utilities throughout the region. Bills have different formats and different billing units.

Caitlin Hirneisen, sustainability program analyst, gathered information from sites that were metered and occupied. She teamed up with Jennifer Riehl, resource efficiency manager, and they reviewed sites with the highest rate of water usage.

Quickly they realized some of the water bills just didn't add up. Bills didn't conform to the size of the location and the number of staff. Upon investigation, it was determined irrigation system leaks were often to blame.



Jennifer Riehl and Caitlin Hirneisen investigate water consumption at BPA facilities; their sleuthing results in saving money on water bills.

The “Water Reduction Gurus” Shared These Tips To Reduce Water Use:

1. Check faucets and pipes for leaks.
A drip can waste 20 gallons of water per day.
2. Don't use the toilet as an ashtray or wastebasket. Every flush uses five to seven gallons of water.
3. Plant drought-tolerant or native species.

Fleet Management Reduces Use of Fossil Fuel

Fleet Management tracks fossil fuel usage for both administrative and operation/support vehicles. Administrative vehicles achieved a reduction of 6 percent and operation/support vehicles saw a nearly 5 percent reduction. The 6 percent reduction in fossil fuel usage for administrative vehicles can be attributed to Fleet's decision to reduce pool assets and communicate the need



DID YOU KNOW?

Sickler Substation

Bills seemed unusually high; 500,000+ gallons per month. Water use jumped dramatically in early spring and dropped in the fall. Riehl wondered about a sprinkler system leak. Her hunch paid off and reduced the monthly bill from \$300 to \$20.

Custer Substation

Water use was unexpectedly high. Investigation revealed the utility was billed in the wrong units. BPA received a rebate of \$18,300. This catch will save BPA about \$7,000 annually on future bills.

for increased alternative fuel usage. The overall cost savings when all fossil fuels are combined (BPA owned & GSA leased) is \$183,058.

The most significant improvement realized was B20 usage with the Big Rigs (also known as Candy Wagons). Gauging and reporting progress on regular fuel use is attributed to this improvement. The goal was to increase alternative fuel by 5 percent against a 2009 baseline. At the close of 2013, B20 fuel usage in the Big Rigs averaged 75 percent. As a whole, Agency alternative fuel usage increased 15 percent.

Employees Drive Fleet Management Improvements

Hydraulic fluid in large equipment such as booms and fork lifts used to be drained and disposed of as hazardous waste. An employee proposed BPA purchase filter carts that allow hydraulic fluid to be drained, filtered and re-used. The carts literally pay for themselves in two uses and provide contaminant-free fluid.

Employees also suggested purchasing fuel polishers — devices that filter fuel so it can be reused, eliminating the need to drain and dispose of it. These reduce fuel costs; produce a clean source of fuel that enhances equipment reliability; and result in more efficient use of technicians' time.

Fleet Management Tips To Use Less Fuel:

1. Avoid excessive idling. An idling vehicle consumes about a gallon of fuel every hour.
2. Monitor traffic ahead to anticipate having to slow down and eliminate heavy braking.



DID YOU KNOW?

What is B20 Biodiesel?

An alternative fuel created by mixing regular petroleum diesel with biodiesel produced from products such as soy beans, canola, mustard seeds and waste cooking oils. The B number indicates the percentage of biodiesel. B20 Biodiesel is 20% biodiesel and 80% petroleum diesel.

3. Obey posted speed limits. One study reports that every 5 mph driven over 65 represents a 7 percent decrease in fuel economy.

myPC Comes to BPA

Information Technology staff replaced more than 700 laptops/desktops with new “thin client” hardware (myPC). myPC provides a virtual desktop environment that allows users access to shared and networked drives from external devices. Each installation saves the agency about \$800 by using less expensive devices that have a longer lifecycle. myPC devices



Employees learn about myPC and Live Meeting during the Ross Sustainability Fair.

also consume less electricity. Each device saves 248 watts per hour when compared to the energy use of a traditional desktop.

Wood Pole Recycling Proves to be a Viable Option

A local company, Pennington Brothers, demonstrated a viable market for old treated wood utility poles removed from service. Untreated poles become side boards for dump trucks, fencing,

trailer decking, furniture, sign boards, and interior and external trim. Treated residual poles find second lives as fence posts, gates, wind break posts, snow drift breaks and barn siding. BPA is currently repurposing 500 poles per year and hopes to expand repurposing operations to a capacity of 4500 poles per year.

This program reduces landfill charges, provides a new product life for the reclaimed poles and offsets the use of virgin materials.



EMPLOYEE ENGAGEMENT successes

Commuting Options Continue to Improve

The Transportation Program created an internal website to help Portland/Vancouver personnel find carpool or ride-share partners to offset fuel costs and improve parking options. At an employee's suggestion, the program was expanded to include employees looking for "bike

buddies" (bicyclers who commute along the same route.)

The Annual Transportation Fairs were held in August and more than 670 mass transit passes were distributed. In addition, employees could play an educational quiz and win a safety-related bicycle product.

Alternative Transportation Day a Big Success

On Earth Day, April 22, the Sustainability Team challenged employees to find alternatives to driving to work in single-occupancy vehicles — biking, walking, carpooling, taking mass transit or teleworking.

On April 22, 960 employees teleworked as compared with 752 employees who teleworked the previous Monday. Remote access doubled from the same date in 2012.



Sustainability Team Lead Rodrigo George and Climate Registry Guru Caitlin Hirneisen don lab coats to educate employees of the advantages of mass transit and the disadvantages of single occupancy vehicles.

Waste Management Shows Improvement

BPA has contracted with Portland State University's Community Environmental Services for the past two years to complete yearly waste material assessments. Landfill diversion rate climbed from just below 50 percent to over 70 percent. Last year BPA diverted over 2,582 tons of materials from the landfill, cut its land-fill-bound garbage volume by 30 percent and composted 35 tons of materials.



35 TONS
of compost collected
from headquarters

"Kick the Can" Lets Employees Make a Choice



A concern identified by the waste audit was the number of nearly empty desk-side trash liners. Dan Krauss, Supervisory

Buildings Management Specialist, joined with Employee Communications and the Sustainability Team to begin the "Kick the Can" campaign to encourage employees to surrender desk-side garbage cans and commit to using the recycle, compost and landfill bins. In return, employees received magnets for their cubes. Displaying a "Kick the Can" magnet shows commitment to sustainability and tells custodians that desk-side trash pickup is not needed at that workstation.



DID YOU KNOW?

Employee Receives Recognition

Don Wolfe, public utilities specialist, received a United States Department of Transportation's 2013 Sustainability Partnership Award in recognition of his leadership in promoting bicycle commuting.



Reduction in the Cost of Office Supplies

Before the Office Supply Re-use program, excess office supply materials were thrown away or recycled. Michelle Jacoby from Mail Services thought there had to be a way to recycle the usable supplies. As a result of her suggestion, these supplies are now brought to a central location to be evaluated and then sent back to stock, recycled, or sent to the Investment Recovery Center to be sold. This year, the Office Supply Re-use Program saved BPA more than \$20,000 by reducing the amount of new supplies that would have been ordered. By partnering with the Investment Recovery Center, more than



During the Ross Campus Sustainability Fair, Bethany Valencia challenges employees to tell which supplies are new and which are recycled.

97 percent of the used office supplies have been diverted from landfills.

In addition to the Office Supply Reuse Program, employees reduced their consumption of paper and toner by 14%. BPA had an overall savings of \$288,000 in office supplies as a result of these and other smaller incremental savings.

Special Interest Speakers Feature Sustainability Topics

Mary Hansel, certified biomimicry professional, presented a lecture on the science of studying nature to solve human problems. Biomimicry emulates nature's strategies for surviving and thriving

on Earth. Examples include formaldehyde-free building materials modeled after mussels, networks that emulate slime mold and self-cleaning paint inspired by lotus leaves.

Wayne Rifer, director of Standards and Training at EPEAT (the global registry for greener electronics), explained that e-waste is the most rapidly growing segment of our waste stream. E-waste may contain toxic and hazardous materials such as mercury, lead, and chromium; but also contains many valuable, recoverable materials such as aluminum, gold, silver and iron. Much electronic equipment can be refurbished, reused and recycled instead of being sent to the landfill.

Employees were able to attend these presentations in person or via webcast.

Annual E-Waste Recycling Event Aids Employee “Spring Cleaning”

The annual-waste recycling event was held at the headquarters building and the Ross Complex. Employees brought unwanted electronics and accessories (monitors, keyboards, scanners, printers, fax machines, televisions, toasters, blenders, etc.). In addition to removing unwanted products from employees' homes, items that contain toxic materials were recycled and kept out of landfills and incinerators. Other equipment was sent to be used to make new products, further reducing pollution, saving energy and conserving resources.



DID YOU KNOW?

New Employees Orientation

Rodrigo George, Sustainability Program Lead, gives new employees a tour of the headquarters building for a first-hand view of implemented sustainability initiatives.

Sustainability Fairs Held at Headquarters and Ross Complex

BPA held the first-ever Sustainability Fair at headquarters during Earth Month. The fair promoted 15 programs with sustainability aspects and more than 350 attendees learned how to make the best use of these programs. Topics included “Live Meeting” and how to use remote computer access (myPC) to reduce business travel, increase ease of teleworking and reduce environmental commuting impacts.

Some programs used levity to draw employees to their table. Famous explorers Lewis and Clark used a quiz to teach employees about document management systems. The teleworking representative donned her bathrobe and set up a home office to demonstrate the benefits of teleworking and educate employees about home office ergonomics. “Dr. Commute” (employees in white lab coats) answered questions about commuting options.

Due to the success, a similar fair was held at the Ross Complex with more than 200 employees attending.

Beach Clean-up

Employees from BPA and Clark County PUD celebrated Earth Month by cleaning up a section of the Columbia River waterfront. Tasks included picking up litter along riverbanks and trails, removing invasive species, planting, trail maintenance and generally sprucing up this popular waterfront park. These efforts help prevent trash from blowing into the river, maintain water quality and provide a safe habitat for river dwelling species.



Dedicated volunteer Irene Frost from Information Technology directs employees to e-waste recycle collection site.



13,610 LBS

of unwanted consumer electronics collected during e-waste event.



Employees brave a cool spring afternoon to improve Frenchman's Bar park on the Columbia River.



BPA Headquarters Earns Gold Certification

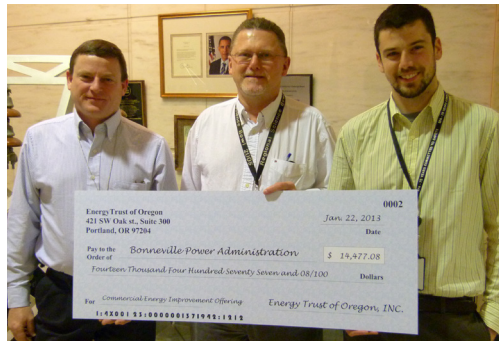
In December 2012 Portland's Bureau of Planning and Sustainability recognized BPA's sustainability efforts at its headquarters building with its Sustainability at Work gold certification. BPA was the first federal agency to achieve this certification. The certification recognizes organizations that create a more sustainable workplace. "Very few organizations have achieved at such a level," notes Paul de Block, Sustainability at Work adviser, Portland Bureau of Planning and Sustainability.



1st PDX
FEDERAL AGENCY
to achieve Sustainability at
Work gold certification

Energy Trust of Oregon Partnership Continues

The Energy Trust of Oregon issued a check to BPA for \$14,477 as a result of physical changes made to lighting and heating systems at the headquarters building. The check reflects verified savings of 437,809 kilowatt hours. In addition to the hard cash, BPA estimates an energy reduction of 4.7 percent over the past two years.



Michael Brand and Stuart McLaughlin from Facilities Operations and Rick Hodges from Energy Efficiency played key roles in the ETO pilot program at BPA headquarters.

"The money from ETO will be reinvested in other energy efficiency projects," says Hodges. "One of the projects will look at metering the headquarters' power use by floor."

Forging of new relationships with external organizations and new opportunities to work across BPA organizational lines were unanticipated benefits of the program.

Kilowatt Crackdown Partnership Gets Results

In January BPA joined in the Kilowatt Crackdown program, sponsored by the Northwest Energy Efficiency Alliance (NEEA). "The Kilowatt Crackdown and our partnership with the Lloyd Eco-District are all about improving the energy intensity of commercial buildings," says Rodrigo George, BPA's sustainability team chair.

The Kilowatt Crackdown helped the building operations team identify low- and no-cost opportunities to save energy.

Headquarters 905 building receives Energy Star certification

The Environmental Protection Agency determined the headquarters building to be Energy Star Certified. Energy Star is a voluntary program that helps facilities save money and protect the climate through superior energy efficiency.

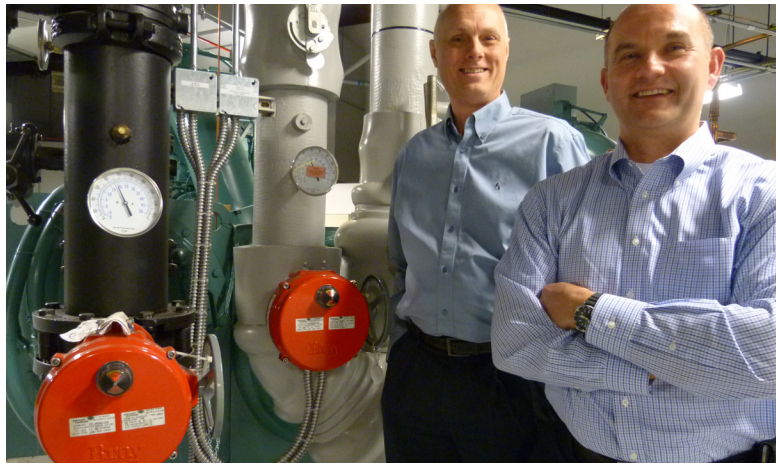
The program requires third party validation and was sponsored by NEEA's Kilowatt Crackdown program.

The Electric Power Research Institute's (EPRI) Energy Sustainability Interest Group

BPA joined EPRI's Energy Sustainability Interest Group in 2013 and benefits by participating in webinars, workshops and collaborative research with over 40 companies within the electric power industry. With growing attention on corporate transparency, disclosure and opportunities to improve sustainability performance, the Energy Sustainability Interest Group focuses on the unique challenges electric power companies face. BPA has benefited by discussing sustainability maturity with industry peers and performing a materiality assessment which resulted in the establishment of our five sustainability pillars outlined in our policy as well as our FY14 cross agency targets.

Lloyd Center EcoDistrict and Transportation Management Association Connect Businesses

BPA partners with other businesses and organizations that comprise the Lloyd EcoDistrict to connect business and



Dan Krauss, Facilities Manager, and Steve Capps, Director of Workplace Services, paved the way for HQ energy improvements.

property owners with tools to operate more efficiently, lower utility costs and save energy.

The "transportation arm" of the Lloyd EcoDistrict is the Transportation Management Association (TMA). BPA has a standing spot on the TMA and actively participates in goals of reducing vehicle traffic in the area, lowering carbon emissions, providing cleaner air and improving the streetscape experience for pedestrians and bikers. BPA's contributions have included paving holes



DID YOU KNOW?

"Green Team"

Federal agencies in the 905 and 911 buildings have formed a "green team" to exchange ideas on sustainability initiatives and share data on building performance. As a result of this information sharing, the U.S. Fish and Wildlife Service sought and obtained Gold Certification from the city and is participating in NEEA's Kilowatt Crackdown.

in the street to make a safer bicycle commute, establishing conveniently located bike racks and providing BPA employees with access to mass transit.

BPA and Portland State University (PSU) Join in Research Project on Energy Management

In May, BPA requested a team of graduate students at PSU's Master's of

International Management program assess BPA's energy practices. The PSU team built relationships with representatives from Power Services, Transmission Services and Facilities. The team provided recommendations and an implementation plan for strategic energy management based on ISO 50001 frame work.



POLICY development

Sustainability included in Official Policy Manual

Sustainability is now reflected in the BPA Manual. In addition to establishing the official policy, the manual chapter defines responsibilities for planning, executing, monitoring and reporting. The policy establishes the five sustainability pillars that will serve as the basis for future initiatives: energy, water, fleet management, materials and waste, and employee engagement.

Storm Water Design Standards Established

BPA's policy defines standards for storm water runoff treatment design for development of new projects or major redevelopment projects. The fundamental principle is to employ systems and practices that use or mimic natural processes.

The policy reflects BPA's commitment to protecting streams, river and ground-water resources vital for fish and wildlife habitat, recreation and drinking water.



DID YOU KNOW?

Sustainable Design Initiatives

A standardized Scope of Work has been developed to support BPA's sustainability design initiatives for substantial remodel projects and new construction projects.

Irrigation Policy Reduces Water Use

Water use analysis showed the largest opportunity for agency-wide water use reduction was through the decommissioning of landscape irrigation systems and the use of xeriscaping (landscaping in ways that reduce or eliminate the need for supplemental water from irrigation). In response to this analysis, BPA instituted

an irrigation policy. BPA will discontinue the use of site irrigation systems and decommission associated irrigation components. The policy allows for exceptions to be requested in order to maintain a positive public image at individual locations.

The Ross Complex stopped watering the lawns in September 2012. Last year, water usage at the Ross Complex dropped by 387,000 gallons, in part because of the new policy.

FOR MORE INFORMATION, YOU CAN CONTACT:

Internal Audiences

Visit BPA Connection/Agency/
Sustainability.

External Audiences

Visit www.bpa.gov and type sustainability into the search function or call Rodrigo George at 503-230-3260.

WHO WE ARE

The Bonneville Power Administration (BPA) is a federal nonprofit agency based in the Pacific Northwest. BPA markets wholesale electrical power from 31 federal hydro projects in the Columbia River Basin, one nonfederal nuclear plant and several other small nonfederal power plants. About one-third of the electric power used in the Northwest comes from BPA; the agency also operates and maintains about three-fourths of the high-voltage transmission in Idaho, Oregon, Washington, western Montana and small parts of eastern Montana, California, Nevada, Utah and Wyoming.

BPA promotes energy efficiency, renewable resources and new technologies. The agency funds regional efforts to protect and rebuild fish and wildlife populations affected by hydroelectric power development in the Columbia River Basin.



SUSTAINABILITY team members

Barry Wooley

Printing & Mail Services

Bradley Wright

Facilities Asset Management

Caitlin Hirneisen

Operations & Planning

Courtney Olive

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Dan Krauss

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