

Sustainability at **BPA** 2015

SMALL STEPS
big difference



Letter from **John Hairston**



In 2010, we began sowing the seeds that would grow into BPA's Sustainability Program. This report reflects the progress made by the program over the last five years.

This year, I moved the Sustainability Program to a more prominent position within BPA by changing the reporting structure. The Sustainability Program Manager now reports to the Deputy Chief Administrative Officer within my organization. Elevating the program within the CAO organization allows more direct influence and access to many of BPA's internal services organizations with reduction potential, such as facilities asset management, fleet management and the motor pool, and supply chain operations.

BPA continued to make great progress in many areas of sustainability this year, including the development of a strategic plan for sustainability that outlines goals to guide our efforts through 2020.

In 2015, the White House revised Executive Order 13693 on sustainability and BPA has diligently mapped the Order's requirements into its internal compliance program to ensure accountability and implementation. As a result, we have enhanced our ability to set targets, actively track and report Greenhouse Gas emission reductions.

Development of goals and metrics helped us recognize opportunities in a new construction project at the Munro Complex, as well as lighting upgrades at BPA's Kalispell Control Center and the Ross Complex warehouse. These goals also prompted the initiation of xeriscaping pilot programs at three BPA sites.

We have expanded BPA's employee engagement efforts to our field offices, exemplified by the efforts of volunteers across the enterprise like the Covington District who helped improve ecosystem conditions for salmon and steel head, and our Seattle office who's efforts contributed to the building they share with other Federal agencies winning the Seattle Federal Green Challenge award.

Lastly, we have experienced measurable culture change within BPA that is built on demonstrated successes. The office supply re-use program is now a way of life at BPA. BPA's Investment Recovery Center shows innovation in finding new ways to sell, trade, and test new uses for materials. Fleet management and the motor pool successfully evaluated vehicle use for opportunities to incorporate alternative fuels, resulting in increases for all alternative fuel types.

I am proud of the accomplishments made by the Sustainability Program and look forward to seeing continued progress next year.

A handwritten signature in black ink that reads "John L. Hairston". The signature is fluid and cursive.

John L. Hairston
Chief Administrative Officer

2015 Sustainability Scorecard

CATEGORY	UNITS	BASELINE YEAR	BASELINE	FY 2013	FY 2014	FY 2015	% CHANGE FROM BASELINE	
SCOPE 1 - FUGITIVE EMISSIONS								
SF6	LBS	2010	6,473	11,735	4,645	1,547	-	76.10%
SCOPE 1 - PETROLEUM FUEL USE								
Aviation Fuel Consumption	GALLONS	2010	124,902	135,714	139,058	128,019	+	2.50%
Gasoline Consumption	GALLONS	2009	749,206	698,919	651,219	608,079	-	18.80%
Diesel Consumption	GALLONS	2009	264,754	262,383	314,920	326,644	+	23.40%
SCOPE 1 - ALTERNATIVE FUEL USE								
E85 Consumption	GALLONS	2009	33,292	29,436	41,619	31,532	+	5.30%
BD20 Consumption	GALLONS	2009	27,893	81,112	91,849	1,115	+	96.00%
Propane Consumption	GALLONS	2009	680	277	704	938	+	37.90%
SCOPE 1 - HEATING								
Natural Gas Consumption	THERMS	2010	138,999	134,134	124,765	102,511	-	26.30%
SCOPE 2 - ELECTRICITY								
Electricity Consumption	KWH	2003	114,348,710	107,992,806	108,678,966	111,092,746	-	2.80%
SCOPE 3 - WASTE								
Waste to Landfill	TONS	2010	635	533	518	561	-	11.70%
Waste Diverted	TONS	2010	1,475	2,310	1,867	3,121	+	111.60%
SCOPE 3 - WATER								
Water	GALLONS	2008	38,611,901	28,513,500	30,694,411	40,251,828	+	4.20%
SCOPE 3 - PAPER CONSUMPTION								
Paper Consumption (total)	REAMS	2008	45,596	37,616	65,595	25,845	-	43.30%
SCOPE 3 - BUSINESS RELATED TRAVEL								
Employee Commuting - Driving	MILES	2011	23,703,741	17,045,090	16,702,980	16,436,137	-	30.70%
Employee Commuting - Alternative	MILES	2011	4,080,932	7,272,168	5,979,041	6,965,603	+	70.70%
Business Air Travel	MILES	2009	4,975,620	2,480,605	4,720,614	6,188,089	+	24.40%
Business Car Rental	MILES	2009	618,660	319,410	not available	not available		

A look back

Our sustainability goals have been focused in these areas:

- ▶ Energy management
- ▶ Water management
- ▶ Asset management
- ▶ Employee engagement

Over the past five years BPA has:

- ▶ Reduced total energy use by 6.6 percent;
- ▶ Reduced water use by 29,548,732 gallons;
- ▶ Reduced fossil fuel use by 285,127 gallons;
- ▶ Diverted 12,498 tons of waste from landfills;
- ▶ Reduced emissions* equivalent to 33 million gallons of gasoline; and
- ▶ Engaged employees in numerous events from celebrating Earth Day with annual electronic recycling to ongoing education about how they can make a meaningful difference.

**Note: Emission calculations do not include transmission line losses*

Energy management

SUSTAINABILITY AND ENERGY EFFICIENCY KEY ELEMENTS IN NEW CONSTRUCTION AND UPGRADES

The design of the new Munro Scheduling Center incorporated energy efficient options for lighting and HVAC systems. These options reduced the number of lighting fixtures, improved air quality, and eliminated the need for mechanical systems to compete to condition rapidly changing temperatures.

LIGHTING UPGRADES BRIGHTEN THE ROSS COMPLEX WAREHOUSE

The Ross Complex warehouse lighting project dramatically reduced the number of fixtures in the Vancouver, Wash., facility — going from 713 fixtures to 221 fixtures, while increasing illumination at floor level from 16-18 foot-candles to 31 foot-candles. The upgrades will save BPA about 96,735 kilowatt-hours per year in energy usage.

In addition to the energy savings, the project decreased hazardous waste by using LED bulbs containing no mercury. And by using bulbs with a

ENERGY MANAGEMENT: WHAT CAN YOU DO

Ten tips for keeping cool

The Portland area experienced record-high summer heat in 2015 — with temperatures hitting triple digits. BPA employees shared ideas on BPA Connection to save energy during the heat wave.

- **Circulate.** If you don't have air conditioning, use portable or ceiling fans to move air. Even a mild breeze can make you feel 3 to 4 degrees cooler.
- **Ventilate.** In the morning or evening, open a window high on the cool side of your house and another one low on the opposite side to promote natural cross-ventilation.
- **Set and save.** If you have air conditioning, set your thermostat to 78 degrees or higher. For every degree above 75, you can save about 5 percent on your bill. A programmable thermostat helps avoid unnecessary cooling costs while you're away.
- **Clean.** A new or clean air filter can reduce your air conditioner's energy consumption by 5 to 15 percent and help it operate more safely.
- **Clear.** Make sure your air vents aren't blocked by furniture or other items.
- **Block the sun.** Use shades, curtains and window coverings to create an extra layer of insulation. According to the Department of Energy, medium-colored draperies can reduce heat gain by 33 percent and reflective blinds can reduce it by about 45 percent.
- **Power down.** Turn off heat-generating devices, such as TVs, computers, stereos and lamps when you're not using them. And only wash full loads of dishes or clothes.
- **Fire it up.** Avoid using your oven on hot days. Grill outside, cook on the stovetop or use your microwave oven instead. Always check for local fire restrictions.
- **Swap your bulbs.** Changing your bulbs can reduce lighting-related heat. A standard 100-watt light bulb produces 10 percent light and 90 percent heat, but new compact fluorescents or LEDs are much cooler and cheaper to operate.
- **Look for Energy Star®.** If you're purchasing an air conditioner, fan or appliance, choose an Energy Star®-certified model that uses less energy and is cheaper to use.

100,000 hour replacement cycle; compared to a 5,000 hour replacement cycle, the project will save substantial maintenance time.

BPA ORGANIZATIONS PARTNER TO REDUCE ENERGY AND EARN INCENTIVES

BPA's Workplace Services group partnered with Energy Efficiency to reduce energy and earn incentives through the Energy Trust of Oregon. This year, these efforts resulted in \$214,370 in incentives; a reduction of 887,270 kWh and a savings of \$66,545.

BPA IS INDUSTRY LEADER IN REDUCING SF₆ EMISSIONS

In 1999, BPA became a partner in the Environmental Protection Agency's SF₆ Emission Reduction Partnership for Electric Power Systems. Each year the partners report their SF₆ emissions and nameplate capacity to the EPA. Nameplate capacity is the total quantity of SF₆ contained in electrical equipment.

In the past five years, the emission rate has been halved, from over 4 percent to just below 2 percent. EPA's March 2015 annual report shows BPA's current performance (SF₆ leak ratio) hovering around 1 percent — below the average of 2.2 percent reported by the Partnership.

Since 2010 BPA has reduced SF₆ loss by 76 percent.

ENERGY MANAGEMENT:

What do you know about SF₆?

SF₆ (sulfur hexafluoride) is a colorless, odorless, nontoxic and nonflammable gas used as an insulator in high-voltage circuit breakers, switchgear and other system components.

But while SF₆ is an excellent insulator, it also has a high global warming potential and is recognized as the most potent of all greenhouse gases. Compared to carbon dioxide (the most prevalent greenhouse gas), SF₆ is at least 20,000 times more effective at trapping heat in the earth's atmosphere.

Because it takes up less space than liquid insulation such as oil, components that use SF₆ are lighter and more compact than the older generation products they replace.

Water management

THE GRASS ISN'T ALWAYS GREENER

In 2015, BPA moved away from traditional landscaping by implementing xeriscaping. Xeriscaping is landscaping and gardening that reduces or eliminates the need for supplemental water from irrigation.

BPA piloted xeriscaping at five of its locations:

- ▶ Eugene substation;
- ▶ Chemawa substation and maintenance headquarters;
- ▶ Alvey substation and maintenance headquarters.

The Transmission Standards organization also established a team to develop new standards for BPA landscaping.



Eugene substation

Asset management

DRIVING ON USING ALTERNATIVE FUELS

Since 2010, BPA fleet management has cumulatively saved 285,000 gallons of fossil fuel by incorporating the use of alternative fuels in its supply chain. Currently, the fleet management organization is reviewing BPA's fuel infrastructure, vehicle allocation and Information Technology systems that collect data from both BPA-owned and GSA vehicles. Our motor pool now employs four electric-hybrid vehicles and our transportation organization is developing an internal policy for electric vehicle charging.

TURNING REUSE AND RECYCLING INTO SAVINGS

The BPA Investment Recovery Center works closely with field foremen to recycle old insulators instead of putting them in landfills, reducing BPA's environmental footprint. The porcelain and glass material from old insulators are repurposed into aggregate and mixed into cement for road base. And the ferrous metals they contain are reclaimed for its steel scrap value.

Other instances of reuse and recycling include millions of dollars of inventory from field projects is returned back to the warehouse for reuse. And, instead of recycling or disposing of surplus office furniture in landfills, BPA donates usable furniture to local hospitals, other Federal agencies and non-profit organizations for repurposing.

These efforts brought in \$293,700 and kept 2,860 tons of material out of the landfills in 2015.

Employee engagement

ANNUAL ELECTRONIC RECYCLING EVENT EXPANDS TO NEW LOCATION

Palm pilots, cell phones with actual buttons, VCRs, microfiche readers, irons and toasters — all found their way into electronic recycling trucks. The annual personal electronics recycling events were held in Portland and Vancouver and, for first time, the BPA Seattle office during the 2015 Earth Day celebration week.

A perennial favorite, BPA employees and contract personnel saved personal electronics throughout the



Annual Electronic Recycling Event Celebrates Earth Day

year to bring in for recycling. The 2015 collection events resulted in over 11,000 pounds of electronic materials gathered, 1,000 pounds more than last year. Impressive when you consider how small PCs and other electronics have become.

BPA VOLUNTEERS IMPROVE ECOSYSTEM

Invasive weed species were planted in the Pacific Northwest for desirable characteristics such as staying green or producing tasty fruit. But, these species compete with native plants, prevent other plants from growing and can take over an ecosystem. This invasion disrupts the balance needed by stream corridors to survive and thrive.

BPA volunteers participated in two efforts in 2015 to improve ecosystems in the region:



Dahl Beach clean up crew

In April, to celebrate Earth Day, a team of about 30 BPA volunteers met at Dahl Beach, a woodsy 9-acre site near the confluence of the Clackamas and Willamette rivers. This site is a long-term SOLVE restoration project for salmon and steelhead.

In July, 13 BPA employees from Covington District and the Seattle office joined employees from King County Parks Department, the Sierra Club, the Rainier Audubon Society and Friends of Soos Creek Park to clean up the Renton, Wash. recreational area. Despite intense heat that day, the volunteers were able to remove invasive plants and watered over 1,000 thirsty native plants in one acre of park land.

OFFICES TAKE TIME OUT TO CLEAN UP

Employees supported 2015 Earth Day by holding office clean-up events at many of BPA's locations. Equipped with a refresher course on federal records and information responsibilities, offices across the enterprise cleaned, purged, shredded and recycled their way through the big clean out.

As a result of these events, more than 90 boxes of supplies were returned to the office supplies areas for re-use. Most of these items had hardly been used; with many brand new and still in original packaging. Participating organizations also sent more than 70 full barrels of paper off to be recycled or shredded.



BPA's Frank Dunn collapses on enormous pile of returned office supplies.



Executive Office employees Tanya Snyder and Rebecca Bowers help reduce meeting handouts.

BPA'S EXECUTIVES BAN HARD COPIES AT MEETINGS

BPA's Executive Office championed the reduction of hard copy materials printed for meetings. All of BPA's Executive Team members and their management associates have been issued electronic notebooks and share materials electronically via Share Point sites to reduce paper.

EMPLOYEES LEARN HOW TO MAKE MEANINGFUL CHANGE

In 2015, BPA offered its first session of the discussion-based course "Creating Climate Solutions" to employees. Developed by the Northwest Earth Institute, the course teaches students about the challenges created by climate change and empowers attendees to make individual changes to mitigate those effects.



Employee participants in first Creating Climate Solutions class.

CELEBRATING EARTH DAY

Photographers take aim at the first BPA sustainability photo contest

The inaugural Earth Day photo contest was off to a promising start with 21 entries in the categories of alternative power, community and sustainability. Winners for the three categories are shown below.

SUSTAINABILITY



Kirsten Watts — Power

Nisqually River Delta Boardwalk: where sustainability and community meet

COMMUNITY



Dennis Groven — Transmission

Warm day fishing

ALTERNATIVE POWER



Loyd L. Towe — Information Technology

Wasco County wind farm

Awards, Recognition and Partnerships

SEATTLE OFFICE SHARES IN FEDERAL GREEN CHALLENGE AWARD

On Earth Day 2015, BPA's Seattle office was part of the Green Team selected to receive a Region 10 Federal Green Challenge Regional Award for waste reduction.

In 2014, the Seattle Federal Office Building — where a BPA office is located — recycling and composting increased by an impressive 91.6 percent. Steps taken to achieve this included:

- ▶ Implementing food waste and paper towel composting in all cafeterias, break rooms and restrooms;
- ▶ Improved signage and location/availability of composting and recycling receptacles; and
- ▶ Training on recycling and composting.

MUNRO SCHEDULING CENTER RECOGNIZED BY SPOKANE REGIONAL CLEAN AIR AGENCY

The Munro Scheduling Center was one of 12 local businesses recognized by the Spokane Regional Clean Air Agency for outstanding efforts to improve air quality. The facility has an underfloor HVAC supply system that reduces air particulates by supplying conditioned air up from the floor and returning air through up through the ceiling, preventing dust settlement. Natural ventilation is provided by operable windows.



Allen French, Chair of the Spokane Clean Air Agency, presents Gold Level Recognition award to Tim O'Brien, Facilities Operations Specialist

HATFIELD RESIDENT FELLOWS

The Hatfield Resident Fellows program provides leadership opportunities within Oregon public service agencies to protect the future vitality and success of public institutions. The fellowship program is run by Portland State University's Next Generation Initiative, but Hatfield Resident Fellows hail from leading universities across the nation. BPA has two fellows, Fern Elledge in its Diversity and Inclusion program and Ian Davidson in its Sustainability program.



Hatfield Resident Fellows Fern Elledge and Ian Davidson

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 Pacific Northwest, 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

ALISA KASEWETER

Climate Change Risk Management

ANNICK CHALIER

Public Utilities Specialist (BPA Bicycle Ambassador)

BRADLEY WRIGHT

Facilities Projects and Planning

CAITLIN COLSON

Program Analyst (Sustainability)

CANDICE SCHAEFER

Workplace Services Operations

CHAD BROWNING

Physical Scientist (Environmental)

CRYSTAL BALL

Constituent Account Executive

DIXIE STEADMAN

Employee Communications

FRANK DUNN

Operations and Planning (Transportation)

GREGORY HUEBNER

Public Utilities Specialists

HANNAH DONDY-KAPLAN

Fish and Wildlife Project Manager (BPA Bicycle Ambassador)

IAN DAVIDSON

Program Analyst (Sustainability)

JENNIFER WILLIAMS

Facilities Planning and Projects

JENNA PETERSON

Environmental Protection Specialist

KENJI SPIELMAN

Technical Operations

MARK HOLMAN

Equal Employment Opportunity

MARTY GAULT

Sustainable Acquisitions

MICHELLE O'MALLEY

Fish and Wildlife Administrator

NOAH CARLSON

Office Supplies Re-use Program

RACHEL HICKS

Office Supplies Re-use Program

RODRIGO GEORGE

Sustainability Program Manager

SANDRA ACKLEY

Environmental Protection Specialist

SHANA KUHN

Deputy, Chief Administrative Office

STACY PFAU

Facilities Engineering

STEPHEN SANDER

Physical Scientist (Environmental)

SUMMER GOODWIN

Public Utilities Specialist (Energy Efficiency)

THANE MILLER

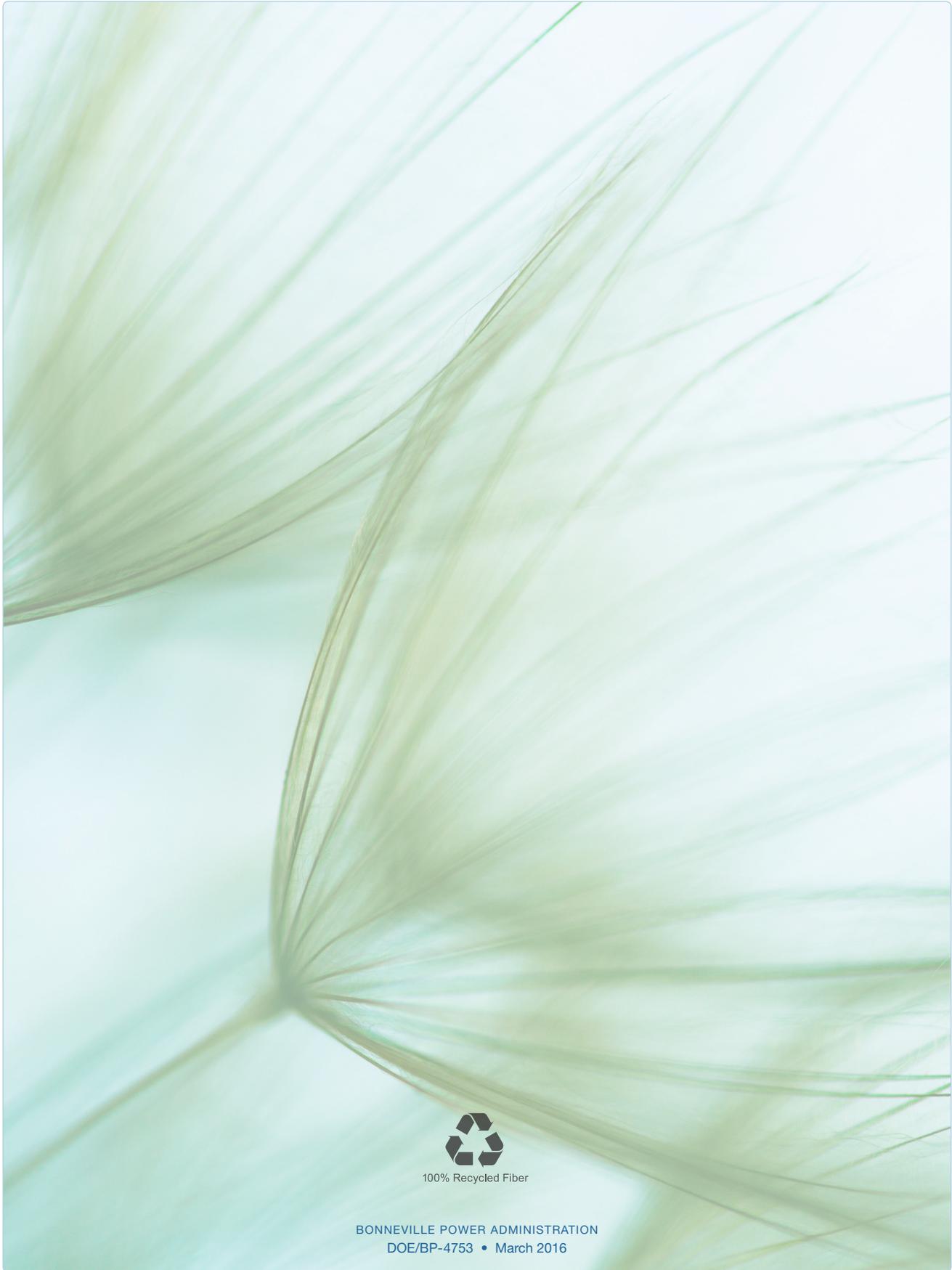
Facilities Projects and Planning

TREICIA MOLINA

Public Utilities Specialist (Systems Support)



BPA's partnership with the U.S. Army Corps of Engineers to restore Crims Island Habitat on the lower Columbia River exemplifies its commitment to environmental stewardship.



100% Recycled Fiber

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