

Our performance



Emissions

Challenges and regulations

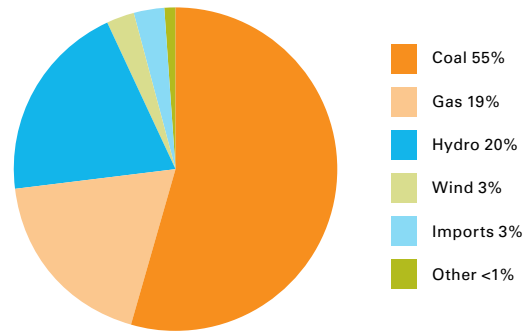
With over 60% of our generation capacity fossil-fuel-based, emissions management is currently the leading challenge for SaskPower. Social and regulatory issues will require us to successfully achieve significant carbon dioxide (CO₂), sulphur dioxide (SO₂), nitrogen oxides (NO_x), mercury and particulate matter reductions while we transition our infrastructure to low or non-emitting forms of generation [SEE FIGURE ONE].

As a large emitter of greenhouse gases (GHG), our company will be greatly affected by developing regulations designed to combat climate change in Canada. At the federal level, Environment Canada was expected to release draft regulations by the end of 2008. It was anticipated that the approach would be based on an intensity system that involves a reduction in the amount of GHG emissions per unit of output [SEE FIGURE TWO].

However, with a new administration in the United States having proposed a cap and trade policy, it is believed that there is a desire for the Canadian system to align with the American approach. This is fundamentally different from the intensity system that was previously proposed by the Canadian government. Either method will pose significant financial and operational challenges for SaskPower. Proposed regulations will also involve a more aggressive approach to dealing with NO_x, SO₂, particulates, mercury and other air contaminants.

At SaskPower, an emissions mitigation plan is in development and will be adjusted as regulations are formalized. Our company has been developing approaches to a variety of scenarios that assess financial and operational implications. Meanwhile, the provincial government has developed a complementary approach to potential federal actions, with the objective of seeking both alignment and equivalence while retaining provincial oversight. The first step along this line has been the development of the *Climate Change Act* in early 2009. It will provide the necessary legislative authority to create the provincial regulatory system for GHG emissions regulation. Negotiations with the federal government are ongoing.

FIGURE ONE
2008 gross electricity supplied



Carbon capture and sequestration

In 2008, SaskPower refocused its efforts on identifying environmentally and economically viable paths forward for its coal-fired generating fleet. In particular, a new initiative – the Boundary Dam Integrated Carbon Capture and Sequestration Demonstration Project – began. This project is focused on the retrofit of post-combustion CO₂ capture technology on Boundary Dam Unit #3. This unit was originally commissioned in 1969 and will be at the end of its current design life in 2013.

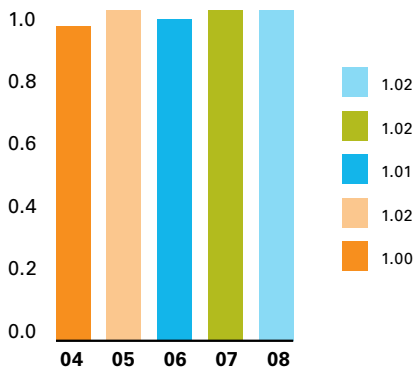
The project consists of three major components:

1. Life extension of an existing 150-MW unit to allow for another 30 years of operation.
2. Installation of emissions control equipment and efficiency upgrades.
3. The retrofit of a one-million-tonne-per-year CO₂ capture system.

The in-service date is targeted for the end of 2013. It will be integrated with a one-million-tonne-per-year CO₂ flood enhanced oil recovery project. The Government of Canada has provided \$240 million in funding to the Government of Saskatchewan to be used for the development of commercial-scale CO₂ capture from a coal-fired electricity generating unit. A significant portion of this funding is being made available to the Boundary Dam Integrated Carbon Capture and Sequestration Demonstration Project.

By the end of 2008, SaskPower approved the critical path engineering and advance procurement. A technology selection process was also initiated during the year and is expected to be completed by the end of 2009. A project budget will be finalized by the end of 2010, along with any necessary environmental approvals and a final decision whether to proceed with the project.

FIGURE TWO
Mass net CO₂ emitted per unit
of net fossil generation (kg/kWh)



Mercury

Through work conducted at our company's Emissions Control Research Facility (ECRF) at the Poplar River Power Station, SaskPower has developed an innovative solution to meet the requirements of the federal Canada-Wide Standard for mercury emissions, which comes into effect in 2010. In 2008, the ECRF received the Canadian Electricity Association's (CEA) Environmental Commitment and Responsibility Program (ECRP) Environmental Stewardship Award for its work on mercury technologies.

Our company has developed in-house capability for analyzing mercury in coal and ash streams, which has been recognized as being one of the most proficient for this kind of analysis. SaskPower is also acknowledged as one of the most experienced utilities anywhere in using continuous mercury analyzers from our work at

the ECRF, which has attracted the involvement of other lignite-burning utilities and suppliers of mercury-control technologies, as well as funding support from agencies in Canada and the United States.

In 2007, full-scale injection of enhanced activated carbon into the electrostatic precipitator (ESP) on Poplar River Unit #2 was started. Based on the success of this work, a permanent mercury control system at both Poplar River units will be operating in 2009.

Key to the success of the work performed at the ECRF has been a strong team of partners. These include the federal government, Saskatchewan universities, the Saskatchewan Research Council, private business, and North American electrical utilities and organizations including the Energy & Environment Research Center (EERC). Throughout 2008, balance-of-plant effects resulting from injection of activated carbon for mercury control at Poplar River Power Station Unit #2 were evaluated.

In the meantime, SaskPower is also offsetting mercury emissions. We are working with Evraz and Wheat City Metals in Regina on a program through which the mercury in automotive switches is captured and recycled before cars are crushed:

- 43.0 kilograms (kg) of mercury were recovered in 2008 (38.5 kg eligible as an offset toward the Canada-Wide Standard for mercury emissions requirement).
- Since inception in 2003, the total mercury recovered through this partnership is 238.4 kg (217.5 kg eligible as an offset toward the Canada-Wide Standard for mercury emissions requirement).

In 2008, our Mercury Thermostat Recycling Program operated for the third year. The initiative ensures the safe collection and recycling of mercury from old household thermostats. Over 850 were picked up for recycling in 2008.

EMISSIONS RESEARCH

Mercury control efforts rewarded

It doesn't look like much to the untrained eye – a few silos and a bunch of pipes located in a warehouse-like structure. But SaskPower's Emissions Control Research Facility (ECRF) near Coronach is home to world-class research. And its success in advancing mercury control efforts has been recognized with the Canadian Electricity Association's Environmental Commitment and Responsibility Program Environmental Stewardship Award.

"We've had many different utilities and organizations approach SaskPower, wanting to work with us and take advantage of the capabilities of the facilities that we have at the ECRF," says Dave Smith, Project Leader of Environmental Initiatives at SaskPower. "I'd say we're right on the forefront of what's going on in mercury control research right now."

Commissioned in 2004, the ECRF was built onto the Poplar River Power Station (PRPS) – a coal-burning facility. Through work at the ECRF, SaskPower has been able to capture and dispose of up to 75% of mercury emissions at the PRPS test unit. The ECRF is the only Canadian facility of its kind, where researchers can draw samples from real flue gas for analysis.

Smith says SaskPower has worked alongside experts from all over North America, many who appreciate the chance to take advantage of a full-scale installation to assess approaches: "Otherwise people have to do tests in a pilot plant facility with some kind of burner that they hope simulates a coal-fired boiler."

Researchers from the Energy & Environmental Research Centre at the University of North Dakota helped SaskPower develop potential technologies to extract mercury from the flue gas. Powdered-activated carbon was injected into a fabric filter to absorb mercury in the flue gas. Scientists from the University of Regina also worked with SaskPower to determine the compatibility of its mercury capture approach with their carbon dioxide capture process.

Work at the ECRF extends beyond mercury. The facility is also evaluating technology related to carbon dioxide, sulphur dioxide and nitrogen oxides. SaskPower also expects research at the ECRF will further enhance the performance of particulate removal by electrostatic precipitators.

"I'd say we're right on the forefront of what's going on in mercury control research right now."

Dave Smith, SaskPower



In addition to successfully determining a process to meet SaskPower's need for mercury capture, our company's ECRF test team is exploring methods to reduce other emissions. We continue to improve the efficiencies of ESPs to ensure that the capture of flyash is within design parameters, typically up to 99.5%. In 2006, significant reductions in particulate emissions at Poplar River Power Station Unit #2 were achieved during its major overhaul; in 2007 more particulate collection enhancements were tested and full installation of these is now in progress. Similar improvements are expected for Unit #1 as a result of its major overhaul in 2008. Also, installation of flyash conditioning equipment is planned at the ECRF for 2009 to determine whether the particulate collection efficiency of the ESPs at Poplar River can be further improved.

SaskPower is also conducting a multi-year project involving a series of significant mechanical improvements and upgrades for SO₂ at Shand Power Station. Once completed, process optimization and potentially more effective SO₂-control reagents will be studied. While the main driver for this work is to reduce our SO₂ emissions so they are well below regulatory limits, we are also examining options to achieve very low SO₂ concentrations in flue gas in order to accommodate effective CO₂ control. Future regulatory developments will likely require significant SO₂ reductions at numerous

coal-fired units [SEE FIGURE THREE]. SaskPower is assessing recently available technologies to determine the best way to meet these new limits cost-effectively while positioning us to meet any future CO₂-control requirements.

Our company has an ongoing program to investigate ways of achieving lower NO_x emissions by modifying conditions under which coal is burned. Work is also planned at the ECRF in 2009 to determine the suitability of using technology capable of high NO_x reductions on flue gases produced from lignite coal similar to that which SaskPower burns [SEE FIGURE FOUR].

Additional research and development

SaskPower's alliance with a range of partners is also driving technological developments. Our company is playing a leading role in the Canadian Clean Power Coalition (CCPC). The group's aim is to secure a future for coal-fired electricity generation within the context of Canada's multi-fuel electricity industry. The CCPC is proactively addressing environmental challenges through technology development in partnership with governments and stakeholders. Members of the CCPC include Canadian coal and coal-fired electricity producers, the California-based Electric Power Research Institute (EPRI), and Basin Electric Power Cooperative from North Dakota. The CCPC is facilitating

FIGURE THREE
Mass net SO₂ emitted per unit of net fossil generation (g/kWh)

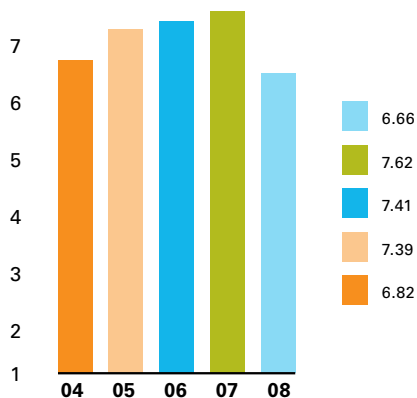
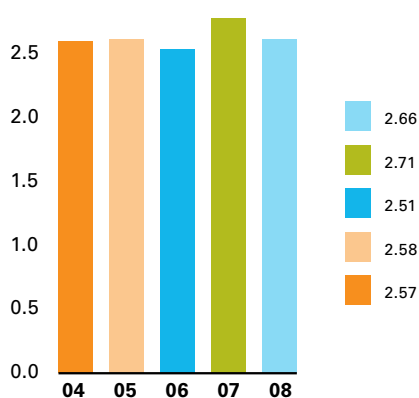


FIGURE FOUR
Mass net NO_x emitted per unit of net fossil generation (g/kWh)



1,000,000

Tonnes of carbon dioxide expected to be captured each year by proposed Boundary Dam Integrated Carbon Capture and Sequestration Demonstration Project.



demonstration plant programs that will lead to the design and construction of clean coal technology power plants by its members.

SaskPower is an industry partner in the International Energy Agency (IEA) GHG Weyburn CO₂ Monitoring and Storage Project. This joint research undertaking with the IEA and EnCana is conducting a world-leading international study that involves injecting and storing CO₂ underground for enhanced oil recovery. To date, results demonstrate that the Weyburn field is highly suitable.

SaskPower is also working closely with the University of Regina's International Test Centre (ITC), which develops technologies to reduce CO₂ emissions. The ITC is establishing Saskatchewan as a world leader in CO₂ capture technology, in part through a \$5.2-million pre-commercial scale technology demonstration plant at SaskPower's Boundary Dam Power Station. SaskPower is also a participant in the Canada Centre for Mineral and Energy Technology (CANMET) CO₂ Consortium. Its objective is to advance an oxyfuel process for the capture of CO₂.

SaskPower is a member of the Lignite Energy Council, which includes utilities from North Dakota that burn coal similar in make-up to that used in our generating stations. The council supports the development of technologies that are designed to reduce emissions that result from burning coal.

Southeast Saskatchewan Airshed Association (SESAA)

Established in October 2005, SESAA is Saskatchewan's first airshed association with a mandate to monitor ambient air quality in the southeast region of the province. SESAA is a collaborative group of industry, government, non-government organizations, and private citizens. The airshed covers an area of 36,800 square kilometres and includes 45 municipalities. Major economic activities in the region are agriculture, oil and gas, mining, power generation, and transportation.

During 2008, SaskPower was once again an active member in SESAA on many fronts. In addition to serving on its Board of Directors, monthly SO₂ and NO₂ monitoring information was provided to SESAA from SaskPower's Estevan monitoring station.

Climate change adaptation

Climate change could present a variety of challenges for SaskPower's planning and operations. Our company's ability to take advantage of potential opportunities and effectively manage climate change risks will be dependent on SaskPower's adaptive capacity – the potential to effectively adjust to rapidly changing circumstances. During the year, a workshop was held with key internal planning staff to better understand potential risks and vulnerabilities associated with climate change and identify priority needs for improving adaptive capacity.

Land

Screenings, assessments and project approvals

In order to ensure compliance with all legislative requirements, SaskPower conducts internal screening of generation, transmission and distribution projects using a comprehensive Geographic Information System-based Environmental Screening System (ESS). Developed internally and maintained by SaskPower Environmental Programs, the ESS is widely recognized by both industry and regulators as an exceptional environmental screening tool.

Using baseline environmental and archaeological information compiled from various sources, including government, private and academic sectors, the ESS is employed by SaskPower to identify, prior to construction, any potential environmental, cultural or heritage issues of concern for proposed projects, including:

- Species at risk and important habitat. This includes species that are either provincially or federally protected.
- Areas that may have heritage significance including archaeological sites, sites of a special nature, national and provincial historic sites, heritage properties, and paleontological sites.

- Crown lands administered by the Saskatchewan Ministry of Environment, the Saskatchewan Ministry of Agriculture, or by federal agencies.
- Areas that have legislated protection such as game preserves and bird sanctuaries.
- Areas considered biologically important.
- Private lands that are either protected by conservation easements, listed as organic agricultural land, or are potentially significant habitat.
- Water bodies, rivers and streams, and wetlands

Project assessment

Projects that have the potential to affect environmentally sensitive lands, habitats or species, or archaeological sites are submitted to Environmental Programs for a detailed assessment. The assessment may determine that legal approvals and permits are required, a field inspection is required, an environmental protection plan must be implemented, or whether other actions are necessary. In 2008, a record 851 projects were referred to Environmental Programs [SEE FIGURE FIVE].

FIGURE FIVE

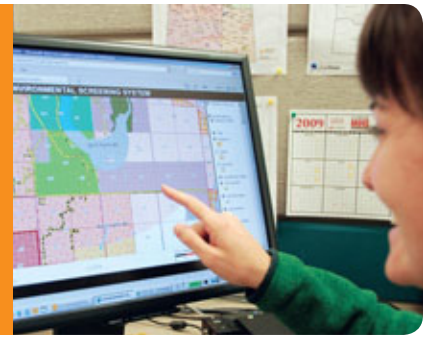
Project referrals and field assessments - 2008

	Referrals					Field assessments				
	2008	2007	2006	2005	2004	2008	2007	2006	2005	2004
Generation	2	4	1	0	2	2*	3*	2*	2*	4*
Transmission	31	22	16	9	2	8*	7*	5*	3*	8*
Distribution	800	567	465	526	383	88*	71*	70*	62*	38*
Fiber optic	4	2	4	-	-	0	1	5	-	-
Other	14	24	8	11	5	4	2	0	7	3
Total	851	619	494	546	392	102*	84*	82*	74*	53*

*Includes fieldwork conducted in 2008 for projects referred to Environmental Programs in previous years.

851

Record number of projects referred to SaskPower Environmental Programs in 2008 for detailed assessment.



Environmental studies

During a routine archaeological field assessment as part of the SaskPower environmental screening process, a SaskPower employee discovered an undisturbed bison kill site near Biggar, Saskatchewan – the Biggar Bison Pound. Not unlike such famous sites as Wanuskewin or Head-Smashed-In Buffalo Jump, archaeological evidence from the Biggar site indicates that First Nations groups gathered at that location to trap bison many times over the centuries prior to the arrival of European settlers.

With the cooperation of the Biggar District Office personnel, a new route for the SaskPower underground development was chosen that completely avoided the archaeological site. The area is now protected under the Government of Saskatchewan *Heritage Property Act*. By following the process outlined in our ESS, SaskPower was able to help preserve an important part of Saskatchewan history.

In early 2007, SaskPower began the process of planning the construction of a new 230-kV transmission line from the Poplar River Power Station near Coronach to the Pasqua Switching Station near Moose Jaw. Due to the scope of the project, SaskPower and the Saskatchewan Ministry of Environment concluded that this project constituted a development as defined in the *Environmental Assessment Act* and that an Environmental

Impact Assessment (EIA) was required. During the year, SaskPower continued to work with consultants to gather information required to complete the Environmental Impact Statement. The program included an on-site investigation program for both environmental and archaeological components.

In 2008, the trend of heightened economic activity in Saskatchewan continued. As a result, SaskPower experienced a continued increase of requests for new connections and service upgrades from all sectors of industry and numerous new transmission lines were taken through the environmental assessment and approval processes.

Site assessments

SaskPower conducts site assessments prior to the sale, purchase or lease of property, or as a result of identification of potential contamination. In 2008, 69 site assessments were carried out [SEE FIGURE SIX]. The assessments may include the investigation of impacts to soil and ground water of polychlorinated biphenyls, hydrocarbons, metals, soil sterilants, and wood treatment chemicals. If necessary, we initiate site remediation after the assessment has been completed. Treatment and disposal of impacted soils are carried out on SaskPower property, or at local community landfills, registered industrial landfills, or other regulator-approved locations.

FIGURE SIX
Site assessments

	2008			2007		
	Phase I	Phase II	Remediation	Phase I	Phase II	Remediation
Storage yards	1	3	0	0	0	0
Substations	5	11	2	4	7	2
Switching stations	0	0	0	2	3	1
Former/existing power plants	1	1	0	0	3	0
District offices	2	7	0	6	3	0
Pole yards	0	4	1	0	0	0
Vacant land/other	7	7	0	3	3	0
Treatment sites	0	1	1	0	2	0
Mine development	9	2	0	14	0	0
Landfills	2	2	0	0	0	0
Total	27	38	4	29	21	3

An environmental site assessment includes three phases:

- Phase I Environmental Site Assessment (ESA): The process used for the identification of past, present or potential environmental concerns through records review, site visits, interviews, etc. This determines if an assessment (Phase II ESA) is needed.
- Phase II ESA: The process used to characterize and/or delineate the concentrations or quantities of substances of concern related to a site and to compare those levels to criteria.
- Remediation: The process used to remove the impacted contaminant from a site for disposal or treatment.

Vegetation management

Throughout Saskatchewan, we manage over 156,000 kilometres of transmission and distribution lines. In order to ensure the safe operation of these lines, SaskPower maintains vegetation along all power line rights-of-way, which can vary in width from 10 to 70 metres.

We use integrated vegetation management practices to promote the development of low-growing vegetation. As a result, we reduce the possibility of branches or limbs falling across a line during a storm, which can cause damage and interrupt electrical service. In forested areas, if trees come in contact with high voltage lines, they could cause forest fires. Integrated vegetation management combines an understanding of plant ecology with a wide range of management tools to manage vegetation in an effective, economical and environmentally responsible manner.

SaskPower's Vegetation Management Policy ensures that vegetation will be managed in a manner that:

- Incorporates ecological principles;
- Considers community values in establishing standards of maintenance;
- Receives land-owner consent;
- Is cost-effective;
- Uses herbicides responsibly; and

- Complies with SaskPower's Environmental Policy, as well as all relevant federal and provincial legislation and municipal bylaws.

The Vegetation Management Policy includes a number of methods for controlling plant species in transmission and distribution line rights-of-way. It also encourages the establishment of plant species that provide important wildlife habitat. Mechanical methods, the use of seeded and naturally occurring native vegetation, and selective herbicide use are included in the options used by our company. The policy results in economic and environmental benefits because of the lower long-term costs associated with an integrated approach.

In 2008, SaskPower continued to work cooperatively with rural municipalities and individual landowners to maintain a database of organic growers and other landowners who have chosen not to have herbicides used in power line rights-of-way that are on or adjacent to their land.

Wood Pole Maintenance Project (WPMP)

There are an estimated 1.2 million treated wood poles presently in service in Saskatchewan. An Industrial Treated Wood Users Guidance Document, developed under the leadership of Environment Canada, contains recommendations that are designed to minimize the release of specific chemical preservatives. SaskPower's new pole yards will be constructed in accordance with the guidance document. Recycling and reuse options for used poles are also being assessed.

Meanwhile, our WPMP acts as an ongoing test and treatment program that identifies wood poles that have reached the end of their in-service life. The WPMP also identifies wood poles that can have their service life extended through the use of additional pole treatments and reinforcement. Wood pole life extension environmental benefits range from not having to harvest new trees for wood poles to avoiding having to dispose of used wood poles in municipal landfills. By the end of 2008, our company had tested and treated 1.065 million of 1.2 million wood poles while identifying 31,000 wood poles for replacement and 6,600 poles for reinforcement.

31,000

Number of wood poles identified for replacement since inception of SaskPower's Wood Pole Maintenance Project.



Electric and magnetic fields (EMF)

EMF are invisible forces that surround electrical equipment and wires that carry electricity, including power lines. SaskPower continually monitors research into the possible biological and health effects associated with the fields created by electrical facilities to determine whether EMF are in fact harmful. As a member of the CEA, we closely follow EMF research conducted by universities, government and other scientific bodies. Our company also designs and operates electrical generation, transmission and distribution systems to comply with recognized standards, including those issued by the Canadian Standards Association.

SaskPower recognizes that EMF is a complex issue, and it is important to acknowledge and address customer concerns. International health agencies and a large number of independent scientific bodies have been unable to establish from research that there is a health risk from exposure. Scientists and health agencies, however, agree that more research is required to fully resolve the complex technical questions associated with the issue.

Our commitment to the issue of EMF includes the following measures:

- To support employee and public education on EMF;
- Upon request, to provide EMF measurements in and around residential, commercial and public buildings as well as SaskPower facilities, and provide typical EMF readings for common types of electrical equipment;
- To provide estimates of EMF levels for proposed SaskPower electrical facilities;
- To cooperate fully with regulatory agencies established by federal and provincial governments and other electrical utilities to review or consider limits on EMF exposure; and
- To participate in communication forums and regulatory proceedings to remain current on all EMF-related issues.

Spills

Current legislation requires that spills of hazardous substances be reported to regulatory authorities. Legislation defines a spill by type, volume and location. SaskPower had 15 reportable spills in 2008. The impact of these spills was either negligible or mitigated appropriately [SEE FIGURE SEVEN].

FIGURE SEVEN

Number of reportable spills

	2008	2007	2006	2005	2004
Oil spills	12	9	12	7	6
PCB-contaminated oil spills (>5 ppm)	0	1	2	2	6
Other spills	3	1	0	6	5
Total spills	15	11	14	15	17

PCB management

PCBs were used by the electrical utility sector as cooling and insulating fluids in some types of electrical equipment. Today, they remain present as a contaminant in varying concentrations in some of SaskPower's equipment. In 2008, new federal PCB regulations came into effect. SaskPower is required to comply with the associated requirements, which include specifics around reporting, labelling, releases, storage, and end-of-use deadlines. A major challenge during 2009 will be the identification and potential replacement of equipment with high-level PCB concentrations that fall within the new end-of-use deadline parameters.

The former Federal Pioneer Ltd. site in Regina is owned by SaskPower and impacted by PCBs. Our company has completed an environmental site assessment to better understand the extent of impacts. As well, an action plan has been created, which will result in the clean-up of the storage cell in 2009.

Biodiversity

Fisheries

SaskPower continues to work as part of a committee that includes Fisheries and Oceans Canada (DFO), Saskatchewan Ministry of Environment (MOE), and the Saskatchewan Watershed Authority (SWA) to identify and resolve potential *Fisheries Act* issues at our facilities. A 2007-2008 Action Plan, a key deliverable under the Protocol Agreement which was signed by the parties in 2007, outlined actions to be undertaken over the period. The activities were primarily focused on information gathering, data collection and bringing facilities into compliance with the *Fisheries Act* by issuing authorizations where deemed appropriate. Action plan activities were completed and in some cases information gathered allowed consensus on the resolution or removal of an issue from the list of potential concerns.

A 2009-2010 Action Plan has been developed and approved. The plan will involve additional information gathering, with increased focus on facility-specific research activities that will further clarify and/or address prioritized issues at SaskPower facilities.

SaskPower continues to work cooperatively with DFO and other agencies to investigate the fish and fish habitat issues that may be of concern as a result of operations at E.B. Campbell Hydroelectric Station. An aquatic assessment research project that began in 2004 to assess how fish habitat use changes with variations in flow from the station was completed. The final report, with suggested flow recommendations to improve downstream fish habitat, was completed in 2008. The recommendations will be assessed by SaskPower to determine operational implications.

SaskPower continues its engagement with the Canadian Electricity Association (CEA) as it moves forward with DFO under their joint Memorandum of Understanding. In participation with other CEA members, activities in 2008 included a review of DFO's Fish Mortality Position Paper and input into the *Fisheries Act* renewal.

SaskPower was one of the founding members of the Saskatchewan River Sturgeon Management Board (SRSMB) and continues as an active member. The mandate of the group is to prevent the further decline of lake sturgeon in the Saskatchewan River, downstream of E.B. Campbell Hydroelectric Check Station. In 2008, SaskPower provided sponsorship to the sturgeon index fishing program coordinated through MOE and conducted by Cumberland House fishermen. Contributions also funded communication initiatives such as the development of an informational website at saskriversturgeon.ca.

Species at Risk Act (SARA)

As a member of the CEA, SaskPower has been active in providing input into national policy development related to the implementation of *SARA* and has provided input into the five-year review of legislation. In 2008,

In 2008, hydraulic modeling and fish habitat mapping downstream of E.B. Campbell Hydroelectric Station were completed, which provided alternative flow recommendations.



several meetings were held with regulators to discuss concerns around *SARA* implementation and possible solutions. This dialogue is ongoing.

For the third year in a row, SaskPower conducted a piping plover survey at Cookson Reservoir, which supplies water to Poplar River Power Station. Several birds were found once again at this location, resulting in identification of a quarter section at Cookson as critical habitat to the recovery of the species.

Discussions were held in early spring to encourage the critical habitat lessee not to allow cattle access to the area until after the nesting season. SaskPower also funds Nature Saskatchewan's Stewards of Saskatchewan Program, which is an umbrella for four landowner stewardship programs – Operation Burrowing Owl, Shrubs for Shrikes, Rare Plant Rescue, and Plovers on Shore.

Migratory Birds Convention Act (MBCA)

In 2008, SaskPower joined CEA members for discussions with Environment Canada on incidental take regulations and to provide input into regulation development. Work continues with the regulatory consultation process regarding amendments.

In anticipation of *MBCA* regulatory amendments, in 2008 an Avian Protection Workshop was held to provide education and awareness regarding SaskPower impacts on migratory birds and mitigation measures to reduce those impacts. The workshop included presentations around the CEA draft Avian Protection Plan, federal and provincial legislation, wildlife interactions with wind turbines, animal clearances, mitigation measures, perch

discouragers, nest management and bird collisions. Discussions regarding SaskPower's next steps will take place in upcoming years.

In 2008, SaskPower also sponsored Nature Saskatchewan's Last Mountain Bird Observatory, which included bird banding and an extensive bird migration monitoring program.

Ducks Unlimited Canada (DUC)

Each year, SaskPower contributes \$115,000 to DUC and the initiatives it undertakes to support the conservation of ducks, migratory birds and their habitats. In 2008, the sponsorship was directed to four programs:

1. Conservation Easement Program

The protection of existing upland and wetland habitats is identified as a high priority. Conservation easements protect lands that are located in areas where habitat loss has already occurred and continues to occur, primarily targeting native uplands and associated wetlands. This year DUC used the funds provided by SaskPower to secure habitat in two different locations within Saskatchewan:

Conservation easements in the Missouri Coteau

The Missouri Coteau is characterized by gently to moderately rolling hills, producing high wetland densities that provide some of the best waterfowl habitat in North America. Given that much of the surrounding land has been broken in the past for annual crop production, these parcels are at risk of being plowed in the future. A total of 264 hectares are being protected.

Conservation easements in the Lightning Creek priority area

The Lightning Creek priority area is situated within the moist mixed grassland ecoregion of Saskatchewan. This land is rated at 40-50 pairs of ducks per square mile and has a predicted breeding density of 10-12 pairs of pintails per square mile (a species of special concern to waterfowl conservation). The majority of the land in the area has been broken in the past, primarily for annual crop production. The remaining native grassland and wetland areas are at risk of loss through breaking and draining. A total of 195 hectares are being protected.

2. Project Webfoot

SaskPower sponsorship of this program is allowing for the development of wetland and field resource materials for teachers and the production of interpretive material for existing DUC projects.

Education contractors working in and around North Battleford, Melfort, Saskatoon, Regina, Yorkton, Swift Current and Wadena deliver hands-on opportunities for students to learn about Saskatchewan wetlands in their classrooms or at a nearby marsh or wetland.

In 2008, there were 240 Project Webfoot classroom presentations and 105 field trips delivered by DUC education contractors in Saskatchewan. Through these programs, information on the importance of prairie wetlands was shared with 7,801 students, 510 teachers and teaching assistants, and 360 other adults. Since the program began in 1999-2000, SaskPower funding to DUC has helped provide learning opportunities to over 61,000 children and 6,090 adults.

3. Forage Program

DUC is trying to increase forage production in Saskatchewan. Previous programs have focused on converting cultivated land to long-term forage stands. However, there is a growing interest among farmers to use nitrogen-fixing forage in short-term cropping rotations, particularly alfalfa or alfalfa/grass blends. To encourage producers to consider using forages in short-term rotation, DUC works with

producers by providing financial incentives to seed a legume as part of their cropping rotation.

In addition, DUC works with producers to develop an on-farm demonstration component that will provide the visual quantitative measurements necessary for producers to make an informed decision on using forage in short-term rotation. In 2008, DUC worked with five producers. Through an agreement with the Tee Two Land and Cattle Co., DUC has secured over 129 hectares for 10 years.

4. Wetland Restoration Project

DUC currently has an active wetland restoration program in partnership with landowners. It is provincial in scope and targeted toward areas that will most benefit waterfowl and other wildlife. Wetlands have been drained to increase farmland area since settlement began. According to Environment Canada, in the prairie provinces, many areas have lost up to 70% of their original wetland habitat.

Restoring wetlands, especially where illegal drainage has occurred, has many benefits: runoff control, improved water quality and increased biodiversity. Integrating wetland restoration with other activities on the landscape, such as conversion to forage, can result in benefits such as improved soil and air quality. The installation of earthen ditch plugs that block the drainage has now become a DUC provincial program. In 2008, SaskPower contributed toward the restoration of 88 wetlands.

Zebra mussels

Zebra mussels are an invasive species that can damage ecosystems and water intake structures. In 2008, SaskPower continued to monitor developing zebra mussel issues and undertook zebra mussel monitoring at SaskPower facilities where a higher risk of zebra mussel introduction has been identified.

Partners for the Saskatchewan River Basin

SaskPower partners with this organization to present Saskatchewan Envirothon, which features teams of high school students demonstrating their knowledge

SaskPower's yearly contribution to Ducks Unlimited Canada supports the conservation of ducks, migratory birds and their habitats.



of environmental science, natural resource management and ecology. The two-day competition tests skills in aquatics, forestry, renewable energy, soils and wildlife management through written exams, field tests, and oral presentations. In 2008, 60 students from 12 Saskatchewan high schools participated, with one team advancing to the National Envirothon.

Nature Saskatchewan

In addition to the Stewards of Saskatchewan Program, SaskPower sponsors Nature Saskatchewan's PlantWatch program, through which people across Saskatchewan track bloom times of common native plants. This data enables us to learn more about climate change, GHGs and simple lifestyle changes that can make a difference to the environment.

SaskPower Shand Greenhouse

Since 1991, SaskPower Shand Greenhouse has been using waste heat from the nearby Shand Power Station to grow millions of trees, shrubs and native grasses and plants that have been provided to communities for use in land reclamation and other environmental planting projects. Over 6 million seedlings have been distributed. In 2008, the greenhouse produced approximately 3,000 native plant seedlings for First Nations University of Canada's Regina campus. They were used for the development of a prairie area which features a large medicine wheel made up of plants of specific colours.

During the year, the greenhouse was also recognized for its role in the classroom when it was presented with an award from the United Nations Regional Centre of Expertise for Education on Sustainable Development. The recognition was received for the SaskPower Shand Greenhouse's Energy and Our Environment Program,

which deals with issues surrounding energy use, GHGs and climate change. It features a poster contest, classroom presentations and environmental workbooks for elementary students and an e-Clips video contest for high school students. These initiatives combined with regular and school tours reached an estimated 4,000 students in 2008.

Waste

Flyash

Flyash is a fine ash that is a byproduct of burning finely pulverized coal in coal-fired stations. It is sold for use in ready mix concrete, mine backfill, oil well cementing, road base stabilization and oil well site environmental applications. In 2008, SaskPower International had a record-breaking year of flyash sales. Over 130,000 tonnes were sold, equating to a savings of over 130,000 tonnes of CO₂. By selling flyash, we are offsetting the CO₂ produced in the course of cement manufacturing.

Insulating oil

Mineral oil is used as an insulator and coolant in virtually all of SaskPower's transformers and in many other types of electrical equipment. Our company reuses most of the oil, and the remainder is recycled.

Zero G

SaskPower's Zero G Waste Management and Resource Recovery Program raises awareness among SaskPower employees and customers about the goal of zero garbage. Internally, Zero G is in place at SaskPower offices and facilities across the province. One of the main



SaskPower's Zero G Waste Management and Resource Recovery Program includes a variety of recycling programs, including one for fluorescent bulbs from SaskPower facilities.

components of the program is a corporate paper and cardboard recycling program. During 2008, SaskPower recycled 84,027 kilograms of waste paper and cardboard from facilities in southern Saskatchewan.

In addition to paper products, our company has found that many of the items used in operations were not included in existing recycling programs. As a result, whenever possible we are responding by developing new recycling programs – either on our own or in partnership with other organizations. Today, Zero G includes recycling programs for materials such as aerosol cans, oily rags, used oil, solvents, antifreeze, batteries, printer cartridges, phone books, plastic bags, metals and streetlight bulbs. Waste audits are conducted at SaskPower facilities each year to help identify new resource recovery opportunities and to ensure that effective waste diversion methods are in place.

SaskPower also takes Zero G into the wider community and raises awareness about the importance of waste reduction through a number of initiatives:

- Clean Team: This partnership is between SaskPower and the Saskatchewan Association of Agricultural Societies and Exhibitions (SAASE). It helps local community groups across Saskatchewan address waste management and disposal on fair grounds. Additional benefits include waste reduction at local landfills, revenues for local nonprofit groups through honoraria and recycling proceeds, as well as year-round access to SaskPower recycle and refuse bins at exhibition facilities. In 2008, 26,823 bags of trash were collected and 3,399 bags of recyclables were diverted from landfills.
- Saskatchewan Waste Reduction Council: SaskPower supplies financial support to this organization, which delivers public education initiatives, particularly during Waste Reduction Week each fall.
- thINK FOOD: Our company continues to join the Regina and District Food Bank in the thINK FOOD program, which recycles laser and inkjet cartridges from SaskPower's offices as part of a Canada-wide initiative. The program also raises much-needed funds for Saskatchewan food banks.
- Head office waste audit: Students from St. Catherine School in Regina assisted with an annual waste audit at SaskPower's Head Office in 2008, giving participating youth first-hand knowledge of the environmental benefits of recycling and waste diversion.

SHAND GREENHOUSE IN THE CLASSROOM

Educational program gets high grade from United Nations

Shelley Heidinger isn't a schoolteacher. Still, she knows what it's like to stand in front of a room full of students, teach a lesson and not panic when arms fly into the air. As Acting Manager at SaskPower's Shand Greenhouse, she has a great deal of experience taking the facility's Energy and Our Environment Program into Saskatchewan's classrooms. As a result, she knows the greenhouse isn't limited to growing seedlings in the soil, but can also plant seeds in people's minds.

"I think education is important because we are teaching our future customers about managing their energy use and its effects on the environment," says Heidinger. "It's amazing how many children out there are very learned about and interested in the environment."

In 2008, SaskPower Shand Greenhouse's Energy and Our Environment Program was recognized with an award from the United Nations' Regional Centre of Expertise for Education on Sustainable Development. Since 1994, greenhouse staff – and numerous SaskPower volunteers – have been visiting Saskatchewan schools teaching grades five and six students about issues surrounding energy use, greenhouse gases and climate change.

"It adds to my resources unit – it's an excellent presentation and well worth it," says Ken Harris, who teaches at Spruce Ridge School in Estevan. He's welcomed the program into his classroom for 10 years and says he will continue to do so until he retires. Harris points out that kids respond well to the cartoon character Lumi the Light Bulb, who presents topics related to mining, electricity production, the greenhouse effect and how to help make a difference in the environment.

The content is designed to get students and teachers thinking. And Harris says it works long after the presentation is over: "Students will come back and talk about different things they've done at home to be more environmentally friendly."

"It's amazing how many children out there are very learned about and interested in the environment."

Shelley Heidinger, SaskPower Shand Greenhouse

