Yesterday, today and tomorrow

Powering a province is not something we take lightly. For more than 80 years, we've recognized the critical importance of our around-the-clock role of providing energy to our customers.

In 1948, conventional techniques made rural electrification too costly for our sparsely populated province. In fact, at the time our company served just 1,500 farms. But we recognized electricity as a fundamental need. Our economy depended on it. So did our way of life.

In response, SaskPower adopted a revolutionary single-wire, ground return distribution system that now serves more than 62,000 farms. Today, all of our customers continue to count on us for the electricity that not only powers our province's agricultural community, but also our businesses and homes.

As we work to secure our energy future, customers will rely on us to make the right choices and demonstrate the ingenuity necessary to enable us to continue delivering on our service promise. Just like rural electrification, the actions we take will affect our customers for generations to come.

It will be up to us to strike a careful balance between sustainability and reliability. Our strategic priorities will guide us through our challenges. And the experience and expertise of our employees will lead us to success.

The next generation

During 2009, the global recession reached across Saskatchewan's borders. Sectors of our economy adjusted from the unprecedented growth of the previous few years. However, for the fourth consecutive year SaskPower registered a record for the power required by customers at one time — a peak load of 3,231 megawatts (MW). By 2019, it's estimated that the system peak will increase to 4,318 MW.

Coupled with the urgency around meeting this growing demand for electricity, like most North American utilities the need to revitalize a significant portion of our aging infrastructure remains at the forefront of our work. As a result of both factors, in the next 20 years SaskPower will have to rebuild, replace or acquire approximately 4,100 MW while also expanding and strengthening a significant portion of our transmission and distribution system.

A comprehensive program of renewal and expansion has already begun. This year, our company made a record capital investment of \$640 million in Saskatchewan's electrical infrastructure. In 2010, we're expecting to invest an additional \$832 million, while over the next decade it's estimated \$8 billion will be required to finance capital requirements.



Approximately 10% of all power generated in Saskatchewan is consumed by losses on the transmission and distribution lines that deliver electricity to our customers. New transmission projects are reducing this effect, lowering the amount of generation required to meet electrical loads.



During the year, the province's Future of Uranium Public Consultation Process led to increasing public interest in Saskatchewan's energy future. As a result, the provincial government called upon the Standing Committee on Crown and Central Agencies to conduct an "inquiry to determine how the province can best meet the growing demand for electricity in a manner that is safe, reliable, environmentally sustainable and affordable for Saskatchewan residents."

In addition to participating in hearings that extended into 2010, SaskPower released, *Powering A Sustainable Energy Future: The Electricity and Conservation Strategy For Meeting Saskatchewan's Needs.* It outlines our company's extensive and ongoing system planning process, as well as discusses the challenges presented by climate change and other environmental issues. It also clearly details how SaskPower is securing our province's short-term needs for the next five years:

- Using customer-focused energy efficiency, conservation and load management programs.
- Installing natural gas turbines that enhance system flexibility, laying the groundwork for the addition of more wind power.

- Encouraging Independent Power Producer development of renewables, such as wind and biomass.
- Pursuing new generation technologies, including the development of one of the world's first and largest integrated carbon capture and storage demonstration projects.
- Undertaking short-term import contracts with neighbouring utilities.
- Upgrading voltages and building new lines to reduce line losses on the transmission system.

The strategy also outlines forecasts for the medium- and long-terms. It presents a broad range of future electricity supply options, along with estimated costs, advantages and disadvantages. Our company sees ongoing stakeholder engagement and public input as central to the successful development and execution of a well-balanced conservation, generation, transmission and distribution strategy.

Less is more

For SaskPower, the lower the demand for power the less we have to produce. And that means there's a reduced impact on the environment and a decreased need to finance infrastructure. That's why Demand Side Management (DSM) — energy efficiency, conservation and altered patterns of electricity use — is such an important part of SaskPower's operational and planning equation.

In 2009, our portfolio of energy efficiency, load management and conservation programs — SaskPower Eneraction — continued to expand. The goal is to assist customers with a cost-effective mix of alternatives for meeting an increasing need for electricity while reducing greenhouse gas (GHG) emissions and improving customer satisfaction. SaskPower Eneraction programs will deliver 100 MW of saved energy to the electrical system by 2017, deferring requirements for new generation.

Growing efficiency

Our company is delivering a variety of programs that are designed to help residential customers reduce electricity consumption. During the year, SaskPower offered an in-store rebate on the purchase of a wireless power monitor. The unit displays total power consumption and cost in real time, helping customers understand how they are using electricity.

In association with 186 participating retailers, instant rebates were also offered on energy efficient lighting products such as dimmer switches, timers, power bars and motion sensors. Use of the products could reduce Saskatchewan's electricity demand by up to 7 MW, which is the amount needed to power about 7,000 homes. SaskPower also continued a widespread education program on energy use and energy efficient practices. It was delivered through workshops and trade shows, as well as online, print and broadcast advertising.

In partnership with SaskEnergy, the ENERGY STAR® Loan Program continues to assist customers in purchasing high efficiency appliances, furnaces, boilers and air conditioners. SaskPower is also providing funding for the provincial Energy Efficiency for New Homes Rebate Program. It supplies incentives to residents who purchase or build a newly

constructed energy efficient home that is either ENERGY STAR®-qualified, R-2000-certified or has an EnerGuide for New Homes rating of 80 or above. Financial incentives were also available to residential and farm customers who install a geothermal or renewable energy system, as well as to businesses for geothermal installations at electrically heated commercial facilities.

SaskPower's new Commercial Lighting Program is making it easier for commercial and industrial customers and non-profit organizations to get more efficient by buying premium efficient fluorescent lighting at standard lighting prices. Lighting-related costs could be lowered by up to 40%, with the program saving between 12–18 million kilowatt hours (kWh) over five years and reducing GHG emissions by nearly 9,000 tonnes.

Our company has also launched a retrofit initiative to assist provincial municipalities in reducing operating costs in ice rinks. Delivered in partnership with the Saskatchewan Research Council, the five-year Municipal Ice Rink Program could reduce power and natural gas costs in a typical artificial ice facility by 15-40%.

The province's Net Metering Program is ongoing, offering a maximum \$35,000 incentive. Customers who generate their own electricity feed excess power back to SaskPower's system. Participants can bank credits for up to one year to offset future electricity use. Only environmentally friendly technologies are eligible. They include wind, solar, low-impact hydroelectric, biomass, flare gas and heat recovery.

Energy Performance Contracting (EPC)

As part of SaskPower Eneraction, in partnership with Honeywell Ltd., our EPC Program assists commercial and institutional customers in reducing energy-related operating costs through audits and efficiency upgrades. In addition to work at SaskPower's own buildings, the EPC Program has been involved in projects at over 130 locations across the province, including schools, commercial buildings, government properties and health facilities. To date, initiatives are realizing combined annual customer savings of more than \$3.3 million and a reduction of electricity use of 25 million kWh each year.

In 2009, Kelsey Trail Health Region signed a \$4.8 million EPC contract with SaskPower to provide efficiency upgrades to 16 health care facilities in the Tisdale area. When complete, each year the region will save over \$411,500 in utility costs by reducing electricity use by nearly 1.7 million kWh and natural gas use by 385,013 cubic meters. Carbon dioxide (CO $_2$) emissions will be reduced by over 2,200 tonnes annually, nitrogen oxides (NO $_{\rm X}$) emissions by 4,334 kg and sulfur dioxide (SO $_2$) emissions by 8,899 kg — about the same environmental benefits as taking 379 midsize vehicles off Saskatchewan roads.

Meanwhile, during the year Sun Country Health Region signed a \$1.7 million EPC contract that will see efficiency upgrades at 21 health care facilities in the Weyburn area. Once work is complete, the region will save over \$167,000 each year through a reduction in energy use of over 1 million kWh and 118,000 cubic meters of natural gas. There will be annual

emissions reductions of over 1,000 tonnes of CO_2 , 2.2 tonnes of NO_X and 6.1 tonnes of SO_2 — equivalent to taking 170 midsize vehicles off Saskatchewan roads.

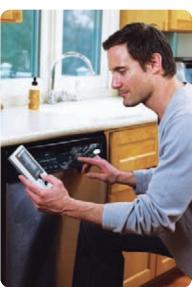
Demand response

Our company's Demand Response Assessment Project concluded in 2009. The study explored various demand response options with 18 of SaskPower's largest customers, determining there is up to 120 MW of potential in Saskatchewan.

With the new Demand Response Program established as a result of this assessment, SaskPower's customers will have the option to provide load reductions when the province is experiencing high demand for electricity, at times of system constraint, or when it provides an economic benefit for SaskPower. Participants are provided financial compensation for shifting their electricity consumption.



Demand Side Management programs are helping defer the need for new generation. SaskPower is targeting 100 MW of saved energy by 2017 through such initiatives as the provincial Energy Efficency for New Homes Rebate Program.



A SaskPower funded in-store rebate program for the purchase of wireless power monitors is helping customers become more aware of how they are using electricity. The units display total power consumption and cost in real time.

Lighting the way to innovation

As quickly as our operating environment continues to change, so must SaskPower. Historically, we've relied heavily on readily accessible and low-cost coal to generate much of our province's electricity. However, future supply options will have to meet unprecedented regulations associated with air emissions, water and biodiversity.

As a result, as we revitalize our system we'll have to develop and incorporate smarter and cleaner ways of generating electricity. And we'll have to do it in a way that maintains the financial stability of our company while continuing to provide energy that supports our province's quality of life and economic competitiveness.

The emissions challenge

Over 60% of SaskPower's generation capacity is fossil-fuel based, using coal and natural gas. GHGs — primarily $\rm CO_2$ from coal-fired plants — are a key target of environmental regulation. We also need to achieve significant reductions in $\rm SO_2, NO_x$, mercury and particulates.

In response, our company is adding more renewable energy—such as wind—to the supply mix and is researching ways to maximize its use. At present, SaskPower is partnering with the Saskatchewan Research Council to investigate renewable energy storage. We're also developing groundbreaking technologies that relate to carbon-based fuels at our own Emission Control Research Facility and other sites.

Capturing an opportunity

SaskPower is leading the potential development of one of the first and largest integrated carbon capture and storage (ICCS) commercial demonstration projects in the world based at Boundary Dam Power Station. This \$1.4 billion partnership between the Government of Canada, the Government of Saskatchewan, SaskPower and private industry would examine the technology's economic, technical, and environmental merits.

ICCS involves the capture of CO₂ emissions from large



SaskPower's Boundary Dam Power Station is the potential base of one of the world's first and largest integrated carbon capture and storage demonstration projects. The initiative would fully retrofit an existing 139 MW coal-fired unit with carbon capture and support an enhanced oil recovery operation.

industrial facilities, such as coal-fired power stations. The $\rm CO_2$ is transported via pipeline and stored in underground geologic formations. In some cases, value is created for the carbon through use in enhanced oil recovery when the $\rm CO_2$ is injected to revive production in depleted oilfields.

In 2009, the business case for the Boundary Dam Integrated Carbon Capture and Sequestration Demonstration Project continued to be developed. A request for proposals (RFP) for a steam turbine and generator was issued, with selection taking place in 2010. The steam turbine for the project will be the first in the world designed from the outset to fully integrate a coal-fired power plant with carbon capture. A provider for the carbon capture technology was also selected in early 2010.

Meanwhile, SaskPower has been invited to participate in a feasibility study in conjunction with Crown Investments Corporation of Saskatchewan and the University of Regina. The partners are exploring the possibility of creating a one-of-a-kind ICCS testing facility that will offer a neutral platform. It will have the capacity to allow industry vendors from North America and around the world to demonstrate two or more large-scale carbon capture systems at a time. The project would be fully integrated, involving CO₂ capture, transportation, injection, measurement, monitoring and verification.

Building a dynamic energy future

SaskPower is continuing to reinforce the electrical system in the province through the addition of three simple cycle gas turbine facilities with the capacity to generate 340 MW. Recently commissioned units are located at the Ermine Switching Station near Kerrobert and Queen Elizabeth Power Station in Saskatoon, with another under construction at a location near North Battleford.

As a result of an RFP for between 100 and 200 MW of peaking generation, our company has entered into a 25-year purchase agreement with Northland Power. The company will construct an 86-MW simple cycle gas turbine near Tantallon. The facility is expected to begin providing power to the provincial grid beginning in late 2011.

Following an RFP for between 200 and 400 MW of new intermediate to baseload generation, SaskPower recently announced a 20-year power purchase agreement with Northland Power for 261 MW. The company will begin providing gas-fired generation from a facility located near North Battleford by 2013.

Winds of change

By installing new natural gas generation that can act as a backup, SaskPower has been laying the foundation for the addition of more wind power. Previously, our company reached an agreement with Red Lily Wind Power LP to purchase electricity by 2011 from a 25-MW wind facility that is being developed near Moosomin.

In 2009, our Wind Power Integration and Development Unit completed an investigation into the technical and operational issues associated with adding more wind power within the province. The study concluded that an additional 200 MW of this type of generation could be added with manageable operational impacts and costs.

As a result, SaskPower has launched two new programs that will enable our company to more than double wind power production. Under the Green Options Plan, SaskPower will undertake a competitive process to procure up to 175 MW of

wind power from one or more Independent Power Producers.

The Green Options Partners Program, meanwhile, will see the purchase of up to 50 MW of renewable power from private sector developers, with up to 25 MW of the total coming from wind power. The remainder will be generated through proven clean technologies, such as biomass, heat recovery or low impact hydro.

When the new generation is brought into service, wind will make up about 8.5% of SaskPower's total generating capacity — among the highest percentages in the country. The expansion of wind power will reduce our company's $\rm CO_2$ emissions by approximately 225,000 tonnes a year.

Generating revitalization

Our company is always seeking to extend the service life of generation assets while maximizing production. As a result, a number of refurbishment projects were active during the year in locations throughout Saskatchewan, including major overhauls at Queen Elizabeth Power Station Unit #2 and Boundary Dam Power Station Unit #2.

Plans are underway for a \$30 million upgrade to Units #7 and #8 at the E.B. Campbell Hydroelectric Station near Nipawin. Work will include the installation of new turbine runners to reduce maintenance and improve the efficiency and operating range of the 42-MW units. The upgrades will allow the station to provide additional energy, eliminating approximately 8,000 tonnes of GHG emissions in an average year by reducing fossil fuel generation. The project is part of an overall hydro facility refurbishment program of approximately \$140 million over five years. Extensive work will also be carried out at Coteau Creek Hydroelectric Station and Island Falls Hydroelectric Station.

During the year, a spillway upgrade continued at Boundary Dam Power Station in order to enable compliance with Canadian Dam Association guidelines. Flow capacity will be three times the original installation. Meanwhile, planning continues for an ash lagoon expansion at Poplar River Power Station. In 2006 and 2008, both generating units at the facility were refurbished, extending their lives for 25 years as well as increasing generating capacity and efficiency. In order to accommodate future volumes of generated ash, additional storage capacity is required in the lagoon.

Extending our reach

In 2009, SaskPower completed transmission connections to 19 industrial customers — a record number for one year. Meanwhile, after nearly three years of route selections, environmental assessments, public consultations and final design and tendering, construction was awarded for the Poplar River to Pasqua 230 Kilovolt (kV) Transmission Line. The 160-kilometre (km) project will be completed in 2010, enhancing system reliability and transfer capability for the capacity increases of the recently-uprated generators at Poplar River Power Station.

SaskPower is proposing to build two new transmission connections to service the expansion of the province's oil and gas sector. The first project is a \$5.8 million 230-kV transmission line that could be up to 24 km long and connect a facility near Leibenthal. The second is a \$3.2 million 138-kV transmission line that could be up to 15.6 km long and connect a facility near Stewart Valley. Our company is also proposing to build a 138-kV transmission connection to supply additional power to a potash mine near Vanscoy.

Meanwhile, SaskPower is continuing to work closely with a number of partners to examine the technical, economic and environmental feasibility of constructing a 500 kV highvoltage direct current (HVDC) transmission line. It would run across Saskatchewan, from Calgary to Winnipeg.

Rural renewal

Our company's accident statistics indicate that most rural area power line contacts occur in farmyards. As a result, SaskPower has introduced two programs to help reduce risk while also replacing aging infrastructure.

Under the Farmyard Power Line Relocation Program, SaskPower will pay 75% of the cost to bury or relocate overhead power lines in farmyards. Customers are responsible for the remaining 25%, up to a maximum contribution of \$2,000. This initiative was fully subscribed in 2009 and a waiting list was created for 2010.

The Rural Electrical Distribution Program is supporting a long-term strategy to improve the existing distribution system in the province. Overhead lines in fields will be moved and replaced with overhead lines in road allowances. Criteria for this program will be based on the need to replace or upgrade aging infrastructure. To date, our company has completed five pilot projects. They include rebuilding 91 km of power lines, with 892 poles removed from farm fields and the conversion of 24 farm services to underground.





Located near Kerrobert, SaskPower's newly-constructed Ermine Power Station has a capacity of 92 MW from two natural gas-fired units. Gas-fired plants can be constructed quickly and economically, and are helping to reinforce our company's system so that more wind generation can be added.

Developing integrated solutions

SaskPower's Service Delivery Renewal (SDR) Program has a goal of driving advances in customer satisfaction and productivity. SDR is undertaking a multi-year redesign of our company's service delivery model and is facilitating an investment in the necessary supporting technology.

It's expected SDR will implement processes that will achieve a number of objectives, including a 25% improvement in targeted service efficiency; streamlined processes to reduce the number of internal handoffs in customer-related activities such as billing, customer connects and outage responses; and a replacement of outdated technologies in areas like billing and telephony.

In 2009, laptop computers with schedule and dispatch software were placed in field trucks. In addition, planning continued for a number of other SDR-related projects, including the possible installation of Advanced Metering Infrastructure (AMI) units at residences and businesses. AMI units would allow customers the ability to better monitor energy consumption while providing SaskPower the ability to aggregate data and information. This would enable better operation and control of the distribution grid, while enhancing future planning for the entire provincial system.

System security

Saskatchewan is part of the North American electrical network through an interconnection to the Midwest Reliability Organization (MRO) and the Midwest Independent Transmission System Operator (MISO). As a result, SaskPower must meet North American Electric Reliability Corporation (NERC) standards. Failure to comply could impact our company's ability to buy and sell electricity in other jurisdictions.

The standards are in place to ensure high service quality and minimize the risk of a system failure. They require utilities to closely control intertie flows, while maintaining sufficient transmission infrastructure and generating capability to withstand the sudden loss of the largest generators in their fleets

During the year, SaskPower passed self-certification while also issuing reliability statistics for the distribution and transmission systems. Our company also became compliant with the appropriate NERC standards and had positive results from a

comprehensive audit and report that followed. An integrated unit has been created within SaskPower to manage oversight, coordination and enforcement.

Environmental and safety management

SaskPower's Environmental Screening System (ESS) was built in-house and uses Geographical Information System technology. It's designed to aid in project development through the evaluation of potential environmental impacts and legal requirements. During the year, upgrades to the ESS continued. Archaeological and paleontological site models were added, which allow for an identification of higher risk areas for heritage concerns based on geographic features.

Meanwhile, SaskPower has established a Protocol Agreement with Fisheries and Oceans Canada, Saskatchewan Ministry of Environment and the Saskatchewan Watershed Authority regarding potential fish and fish habitat issues at our facilities — the first of its kind in Canada. Our company continues work on implementing an Action Plan agreed to by all parties. Continuing through 2010, key activities include the development of regulator-approved facility operational procedures and undertaking impact research at E.B. Campbell Hydroelectric Station.

SaskPower is well positioned to meet environmental and safety requirements through two widely recognized standards. Our company-wide ISO 14001-registered Environmental Management System (EMS) provides SaskPower, employees and contractors with the necessary guidance to identify, monitor and manage our impact on air, land and water. Since implementation in 2000, SaskPower has maintained eight ISO 14001 registrations through annual independent EMS audits conducted at facilities across the province.

Our company also maintains a Safety Management System in compliance with the internationally recognized OHSAS 18001 Standard. In addition to internal safety programming that involves ongoing communication and training, SaskPower has varied public education safety initiatives that include presentations and province-wide advertising campaigns.

In 2009, our company experienced the fewest ever lost days due to work-related injuries. During the year, SaskPower also developed the new Contractor Health and Safety Management Program and Policy; Public Safety Policy and Standard; and corporate Health and Wellness Program.

Electrical potential

Everything that SaskPower accomplishes results from the expertise and dedication of our people. Attracting and retaining qualified employees to ensure optimal service remains a priority. It's expected that over 30% of our workforce will retire during the next decade, with over 50% of SaskPower's senior leadership team retiring within five to seven years.

In 2009, a workforce plan was completed and shared through presentations within our company. It includes several key sourcing strategies. Meanwhile, we continue to respond to the feedback received in our most recent employee engagement survey. A new performance management process has been rolled out, with almost 600 employees trained. The first phase of our Career Management Program has also been implemented, with the launching of a website for employees to provide tools for improving resumes and interviewing skills.

Cultural advancement

Our company recognizes that we must become even more reflective of the communities we serve. Our Diversity Strategy outlines the importance of recognizing the skills and contributions of employees from designated groups that include Aboriginal people, people with disabilities, visible minorities and women in under-represented positions.

In 2009, SaskPower was named one of Canada's best diversity employers by a national magazine while also meeting our net increase diversity target by hiring well over 100 permanent employees. Diversity-related events included a conference attended by hiring supervisors, as well as school literacy and supplies programs in North Battleford and Sandy Bay.

Spending power

As one of Saskatchewan's largest companies, we are conscious of the importance of maximizing the benefits of our operations-related spending. As a result, we source as many goods and services from within our province's borders as possible.

In 2009, SaskPower invested over \$1 billion in Saskatchewan through the payment of wages and benefits, purchases from Saskatchewan suppliers, and payments of taxes and royalties. In order to enhance business development — especially in the North — our company regularly partners with regional development agencies to hold information sessions. Existing and potential suppliers are able to learn about SaskPower's procurement requirements, processes and policies.

Public enlightenment

SaskPower is committed to supporting the communities we serve. Our Corporate Contributions Program has an annual operating budget of \$1.5 million, which is directed to a number of areas that include culture, sports and recreation; diversity; environment; and education.

In 2009, SaskPower renewed its 11-year partnership with the Saskatchewan Institute of Applied Science and Technology (SIAST) by funding new lab equipment for the Electrical Engineering Technology Program. Our company also supports educational initiatives with the University of Regina and University of Saskatchewan.

SaskPower's environment-related community support includes a partnership with the Nature Conservancy of Canada (NCC). During the year, we launched the Conservation Volunteers Program in Saskatchewan together. The initiative engages people in conserving biodiversity, while providing an educational experience in ecologically significant natural areas. It also offers work events where volunteers join NCC staff to complete priority conservation work.



Approximately one-third of SaskPower's workforce is expected to retire in the next 10 years. A new workforce plan is helping to identify recruitment strategies while our company is stressing the necessity of passing knowledge and experience from one generation of employees to the next.





The SaskPower Shand Greenhouse was built in 1991 adjacent to the Shand Power Station. In addition to growing and distributing more than 500,000 seedlings annually, the facility offers programs that increase awareness of the relationship between electrical generation and the environment.

Throughout the summer and fall, once again the SaskPower Clean Team operated across Saskatchewan. An ongoing partnership between SaskPower and the Saskatchewan Association of Agricultural Societies and Exhibitions (SAASE), the program involves youth groups and rural communities working together to reduce waste and collect recyclables at local exhibitions and events. During 2009, the SaskPower Clean Team expanded its reach to 27 communities, with 33 youth groups participating to collect 35,371 bags of trash and 6,402 bags of recyclables. Other SaskPower-related environmental support includes funding for the Saskatchewan Prairie Conservation Action Plan, Ducks Unlimited Canada and the Saskatchewan Environmental Society's Destination Conservation Program.

Safety also remains a priority, with SaskPower continuing support of the Saskatchewan Safety Council by providing funding for the delivery of the Power Pac Program. It uses youth trained by the Saskatchewan Safety Council to deliver safety presentations to rural and urban schools. SaskPower has participated in the program since its inception in 1999, helping to reach children and youth with important safety messages.

Planting the seed

The SaskPower Shand Greenhouse operates using waste heat from the Shand Power Station. Each year it grows trees, shrubs and forbs for use in conservation, shelter and land reclamation planting projects across the province. In 2009, the facility distributed 545,128 seedlings to bring the cumulative total since 1991 to 6.3 million.

The SaskPower Shand Greenhouse also champions environmental education. Programming includes the Energy & Our Environment Poster Contest. It encourages elementary school students to create posters with environmental themes that demonstrate how we all can incorporate responsible choices into our daily lives and take action in response to climate change. Meanwhile, the Energy and Our Environment ecoClips Video Challenge challenges senior high school students to explore environmental, social and political issues related to energy production and consumption by making a short video.