

ST. JOSEPH'S GENERAL HOSPITAL

2012 CARBON NEUTRAL ACTION REPORT

Executive Summary:

Demands on health care continue to grow as populations grow and age. More complex care is required as chronic diseases surge and opportunities for successful intervention improve. We are challenged with serving an aging population with an aging infrastructure. We are keenly aware of the need to consider the environmental impact of all decisions we make.

A sustainable environment is one of the key values of St. Joseph's General Hospital and the Catholic Health Care Ethics Framework. As a faith based organization we recognize that we must treat the whole person and that in so doing we must take care to do no harm to the person. We also recognize the need to reduce and mitigate harm done to the environment through changes to the way we consume energy and resources and the methods of disposal of waste.

The health care system is a major consumer of non renewable resources including electricity and natural gas and renewal resources such as paper products. We recognize the need to preserve these resources and reduce our consumption wherever possible. We also understand the need to reduce the amount of waste going to the landfill as well as to reduce hazardous waste.

Actions Taken to in 2012 Reduce Greenhouse Gas:

All Department Managers have completed Department Action Plans; one of the questions was to look for areas where reductions and energy savings could occur. This helped to keep energy savings and reductions top of mind for the management team. This was also communicated to the staff working in the hospital as the managers shared the document with the workers in the department.

We have made efforts to recycle as many products as possible, and to reduce dependence on single use linen products. Because hazardous waste is transported

greater distances it consumes proportionally more energy to dispose of than normal trash. We monitor that waste stream to ensure only hazardous waste is being disposed of in the hazardous waste containers. We also educate staff on proper disposal of trash and recyclable items. We use best practices when considering purchases of energy consuming devices, including Energy Star appliances and low energy use lighting and computers.

During the planning stages for new construction or renovation consideration is given to using energy saving materials and reducing the carbon footprint. This is done by improving building insulation, including new windows with sun protection film to reduce heat load and LED lights for procedure rooms. This helps to reduce cooling costs which reduces the demand for electricity.

Several on demand hot water heaters were replaced with a more efficient type, this reduced natural gas use.

Two of three main hospital chillers were replaced with a type which uses less electricity.

An older steam boiler was decommissioned and replaced with a condensing boiler this reduced our demand for natural gas. This project was completed in early 2013 and will realize a reduction of 555,939 Kwh of electricity and 2,328 GJ of natural gas per year. (This is an annual reduction of 431.75 tonnes of CO₂.)

Additional infrared hot water taps were installed; this will save hot water by replacing faucets as they age and ensuring no leaking faucets are in place. This will also reduce domestic hot water demand and related energy to heat that water.

As part owner of the Regional Laundry, SJGH realized a carbon footprint reduction from efficiencies gained at laundry. These changes included removal of the flatwork ironer which consumed 25% of the high pressure steam generated by the boilers at the laundry. Three large washers were removed and replaced by two smaller sized units; this reduced the consumption of natural gas and electricity because the loads are now the correct size for the washers.

Initiatives for 2013:

Renovations are planned for a number of areas within the hospital and with each renovation consideration will be given to reduction in carbon output. This will be through replacement of windows and insulation of walls where possible.

Ongoing replacement of inefficient lighting in the main lobby will result in reduced demand for electricity.

Windows are being replaced in the older 1938 Wing of the hospital. These are energy efficient windows with reflective film to reduce heat and sunlight; this will reduce heating demand in the winter and cooling requirements in the summer.

Windows in the Psychiatric wing are being retrofitted with reflective film and a large skylight is being screened to prevent heat build - up.

We have started a conversion from single use OR Surgeons Gowns to a re-useable cloth gown. This conversion will reduce the amount of hazardous waste generated and will reduce the amount of trash being produced.

A greater emphasis will be placed on staff education and orientation based around energy conservation through the introduction of a Go Green Program; this will include:

- Staff and volunteer engagement and communication.
- Orientation.
- Signage.
- Outcomes and measures.

Carbon Credits:

In 2011 Saint Joseph's carbon use was 1,532 tonnes. In 2012 we used 1,353 tonnes this was a reduction of 179 tonnes; an overall reduction of 11.68%.

Greenhouse Gases in Tonnes							
	Measure	Quantity	CO ₂	BioCO ₂	CH ₄	N ₂ O	tCO ₂ e ¹
Scope 1 (Direct) Emissions							
Mobile Combustion (Fleet)	Litres	13,070.06	33.39	1.28	0	0	35.32
Stationary Combustion, Reported ³	GigaJoules	22,798.43	1,141.57	0.96	0.02	0.02	1,149.59
Scope 2 (Indirect) Emissions							
Purchased Energy, Reported ³	GigaJoules	18,950.18	130.76	0	0	0	130.76
Scope 3 (Business Travel and Office Paper) Emissions							
Office Paper	Packages	6,742.00	38.26	0	0	0	38.26
Total Emissions, Calendar Year 2012			1,343.97	2.24	0.02	0.02	1,354
Carbon Neutral or Offset Exempt			0	2.24	0	0	2
Total for Offsets⁴			1,343.97	0	0.02	0.02	1,352

1. Each greenhouse gas has been converted to a standard measurement (tCO₂e) by multiplying its emissions by its global warming potential (GWP). The GWP of carbon dioxide (CO₂) from both anthropogenic and biogenic sources is 1; methane (CH₄) is 21, and nitrous
2. Estimated data has been calculated based on the methods described in the Methodology Document.
3. Reported data refers to consumption which has been directly billed to the organization.
4. Report the tCO₂e value from the "Total for Offsets" line, to the Pacific Carbon Trust.

The 2012 total emissions and offsets purchased by quarterly period and annual total to become carbon neutral are listed below:

Quarter:	Q1	Q2	Q3	Q4	Total
Dates	January to March	April to June	July to September	October to December	2012
Estimated /Actual Emissions (tCO ₂ e)	479.57	274	177.01	421.65	1,352
Price per Tonne	\$25.00	\$25.00	\$25.00	\$25.00	\$25.00
Sub-Total	\$11,989.25	\$6,850.00	\$4,425.25	\$10,541.25	\$33,800.00
HST @ 12%	\$1,438.71	\$822.00	\$531.03	\$1,264.95	\$4,056.00
Total Due	\$13,427.96	\$7,672.00	\$4,956.28	\$11,806.20	\$37,856.00

- Rounded to the nearest full tonne.



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Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act.

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Not Yet Evaluated				No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Car pooling is encouraged. It has been recommended that rental vehicles be used for travel greater than 200 kms to ensure more fuel efficient vehicles are used.	Continue to encourage car-pooling.	2012	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Completed (in Reporting Year)	The Hospital car was sold. When necessary, a rental car will be used for travel. The Hospital car was an older model; a new model rental car will use less fuel.		2012	2012
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Not Yet Evaluated				No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Some windows have been retrofitted with reflective film to reduce heat.	Additional windows will be fitted with reflective film. When new windows are required these will be required to have filtering to reduce heat and sunlight from entering the building.	2012	2013
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Not Yet Evaluated				No End Date (Continuous)
Encourage use of stairs instead of elevators	Not Yet Evaluated				No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Staff have been reminded to shut off lights when they leave the room.	Continued reminders through newsletters, email fan out and signage.	2012	2013
Promote hot water conservation	Ongoing/In Progress	Additional staff washroom sinks have been retrofitted with hands free faucets.	As new sinks are installed in renovated areas all will have handsfree faucets; as faucets require repairs they will be replaced with handsfree.	2012	2013
IT power management					
Install power management software which shuts down computers outside of regular business hours	Not Yet Evaluated				No End Date (Continuous)
Implement server virtualization	Not Yet Evaluated				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in Previous Year)				No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Not Yet Evaluated				No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Not Yet Evaluated				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Completed (in Previous Year)				No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Leased buildings					
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	Not Yet Evaluated				No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Not Yet Evaluated				No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	Completed (in Previous Year)				No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Not Yet Evaluated				No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Completed (in Previous Year)				No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Not Yet Evaluated				No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	Not Yet Evaluated				No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	We have been able to meter our use of electricity and natural gas but this has not been done on a daily basis.	Real time Electrical and natural gas meters will be installed in 2013 to better monitor use.	2013	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Two of the four chillers were replaced in 2012, these were older models and obsolete. The Boiler Upgrade project was completed in 2012, the final hot water boiler was replaced with a high efficiency condensing boiler.	Systems will be monitored.	2012	2012
Upgrade lighting systems during retrofits	Ongoing/In Progress	Some low energy lighting has been installed in the lobby of the Hospital.	Complete installation of low energy lighting in the lobby.	2012	2013
Upgrade/adjust control systems during retrofits	Completed (in Reporting Year)	Completed before 2011		2010	2010
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	SJGH Will continue to use the highest rated products when retrofitting building systems.	The windows in parts of the Hospital will be repalced in 2013. This includes older style stained glass windows in the chapel on the third floor.	2012	2013
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Not Yet Evaluated				No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Share point is used for planning committees notes and communication where possible.	Increased use of sharepoint and electronic communication.	2011	No End Date (Continuous)
Use electronic document library for filing common documents	Not Yet Evaluated				No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Not Yet Evaluated				No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Where possible SJGH is using 30% recycled paper products. 17% of paper products used at SJGH are the 30% recycled content.	Continue using recycled paper and where possible use a larger percentage of recycled content.	2008	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Ongoing/In Progress	The minimum standard for SJGH is 40% recycled paper and where possible we are exceeding that. 80% of paper used at SJGH is 40% recycled content.	Where possible move to using 100% recycled content paper products.	2008	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	SJGH purchases the highest possible recycled content of paper. 3% of paper produced used at SJGH are 100% recycled content.	Continue to use 100% recycled content where possible. Switch to a greater content of recycled paper where possible.	2008	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	Where possible printers are set to duplex print.	All new devices purchased will be programmed to duplex print.	2012	No End Date (Continuous)

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Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Ongoing/In Progress	Web - conferencing is used whenever possible. Staff are trained in use of web media and are encouraged to use this.	Continued use of web-conferencing and teleconferencing.	2011	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress	Staff are encouraged to attend virtual conferences where possible.	Continued encouragement to use virtual conferencing.	2011	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Staff are encouraged to car-pool to meetings.	Car-pooling will continue to be stressed for all staff.	2012	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	We have established bicycle parking under cover at SJGH and have a designated space for electric bikes and motorcycles.	We are looking at free parking for scooters and Motorcycles on site.	2011	No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Completed (in Previous Year)				No End Date (Continuous)
Make desktop web-cameras available to staff	Completed (in Reporting Year)	Desk top cameras were deployed to a number of offices.		2012	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Completed (in Previous Year)				No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	Not Yet Evaluated				No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	We have had some training for our Engineering Department and are pursuing additional training and conferences.	Continued training will be sought.	2012	No End Date (Continuous)
Include green options in employee performance measurement system	Not Yet Evaluated				No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Not Yet Evaluated				No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Not Yet Evaluated				No End Date (Continuous)
Provide green tips on staff website or in newsletters	Not Yet Evaluated				No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
Team-building					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Not Yet Evaluated				No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Not Yet Evaluated				No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Not Yet Evaluated				No End Date (Continuous)
Other Sustainability Actions					
Adaptation to Climate Change					

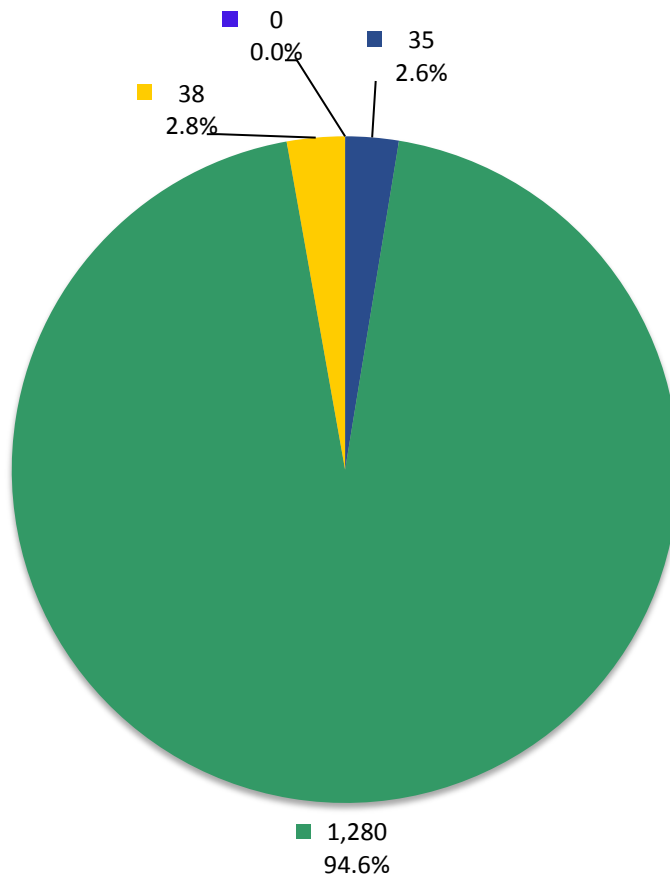
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Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Not Yet Evaluated				No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Not Yet Evaluated				No End Date (Continuous)
Commuting to and from home					
Encourage commuting by foot, bicycle, carpool or public transit	Not Yet Evaluated				No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Not Yet Evaluated				No End Date (Continuous)
Provide secure bicycle storage	Completed (in Previous Year)				No End Date (Continuous)
Procurement (non-paper supplies)					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress	SJGH purchases recycled paper products.	We will continue to purchase recycled paper products.	2008	No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Not Yet Evaluated				No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Not Yet Evaluated				No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	SJGH has a comprehensive recycling program and works with vendors to ensure waste is recycled or diverted from landfill.	We will continue to work with vendors to reduce packaging and encourage recycling of waste.	2011	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	SJGH has a comprehensive waste management program in place.	We will continue with this practice.	2008	No End Date (Continuous)
Water conservation					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	In Development	We have changed many of the faucets to hands free.	Additional faucets will be changed as they require replacement or during renovations.	2011	No End Date (Continuous)
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	Not Yet Evaluated				No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Not Yet Evaluated				No End Date (Continuous)

St. Joseph's General Hospital Greenhouse Gas Emissions by Source for the 2012 Calendar Year (tCO₂e*)



Total Emissions: 1,354

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)
- Fugitive Sources

Offsets Applied to Become Carbon Neutral in 2012 (Generated May 27, 2013 11:14 AM)

Total offsets required: **1,352**. Total offset investment: **\$33,800**. Emissions which do not require offsets: **2** **

*Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

** Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.