Sulzer HST

World-leading technology built to last

SULZER CONFIDENTIAL

Sulzer

3.55 B USD Swiss company founded in 1834

Lou Roman Water Reclamation Plant, City of Windsor, 2 x HST40, 495hp

http://windsorstar.com/news/local-news/energy-projects-saving-the-city-3-6m-annually 3/8/2018

For example, it cost $1.1 million for new energy efficient turbo blowers to use in the aeration process at the Lou Romano Water Reclamation Plant. But there was a government incentive worth $298,000 and the blowers save 1.5 million kilowatt hours of electricity per year, which translates into $255,000 in savings annually. Since put into commission in October of 2015, they've saved $510,000, reduced electricity consumption by 2.9-million kWh and reduced carbon emissions by 138 tonnes. The payback period – the time it takes for the savings to pay off the original cost – is just 3.1 years, so those blowers are well on the way to being paid off.

City of Lloydminster WWTP, AB, 3 x HST40, 495hp each

Significant Cost Saving from September 2010/11 to September 2011/2012

- Saved 32 % of power bill in the first 4 months;
- Dissolved Oxygen average increase from 0.69mg/L (2012) to 3.66mg/L (2013) in months April to August in cell#1
- Cost savings of $96,036.64 in the first year

Significant Cost Savings from September 2011 to September 2013

- Two year savings of $202,465.51 compared from 2011 to 2013

- Noise Level 79-81 dB at 80% output compared to PD blowers at 115 dB. Potential hearing damage after 85 dB without protection after 8 hours (small vacuum). 115 dB, damage under 2 minutes of exposure (dance club)
- Maintenance free and operations cost?
- **Blower Maintenance**
  - **Expenses**

2012	2013
$ 17,225.00	$ 476.00

Strathroy WPCP, ON, HST40-U400-1-L-58

You replied to this message on 1/12/2016 3:07 PM.

From: Mark Harris <mharris@strathroy-caradoc.ca>
To: Andrew Garland; Shutov, Vlad; Fauteux, Scott
Cc: Ralph Coe; Andrew Meyer
Subject: Turbo Blower - First Hydro Bill

Message 20160112121515603.pdf

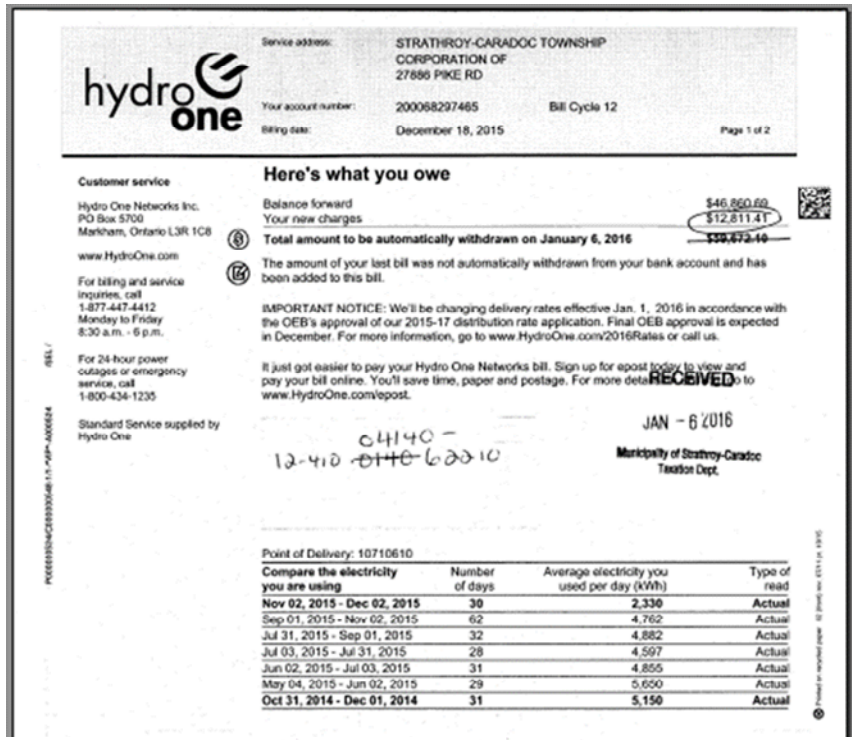
I thought you may be interested in seeing the first Hydro Bill since Turbo Blower start-up October 29, 2015. Compared to the same billing period in 2014, our hydro consumption is down 55%.

The results are much better than forecast.

Mark Harris
Director of Environmental Services
351 Frances Street
Strathroy, ON N7G 2L7
Phone: 519-245-2010 X 824
Fax: 519-245-5384
Email: mharris@strathroy-caradoc.ca

- 1 x HST40-U400-1-L-58, 400hp to replace 3 x 125hp blower

Strathroy WPCP, ON, HST40-U400-1-L-58



hydro one

Service address: STRATHROY-CARADOC TOWNSHIP CORPORATION OF 27886 PIKE RD

Your account number: 200068297465 Bill Cycle 12

Billing date: December 18, 2015 Page 1 of 2

Here's what you owe

Balance forward $46,860.60
Your new charges $12,811.41
Total amount to be automatically withdrawn on January 6, 2016 ~~$59,672.10~~

The amount of your last bill was not automatically withdrawn from your bank account and has been added to this bill.

IMPORTANT NOTICE: We'll be changing delivery rates effective Jan. 1, 2016 in accordance with the OEB's approval of our 2015-17 distribution rate application. Final OEB approval is expected in December. For more information, go to www.HydroOne.com/2016Rates or call us.

It just got easier to pay your Hydro One Networks bill. Sign up for epost today to view and pay your bill online. You'll save time, paper and postage. For more details go to www.HydroOne.com/epost.

RECEIVED
JAN – 6 2016
Municipality of Strathroy-Caradoc Taxation Dept.

04140 – 62310

Customer service
Hydro One Networks Inc.
PO Box 5700
Markham, Ontario L3R 1C8
www.HydroOne.com
For billing and service inquiries, call 1-877-447-4412 Monday to Friday 8:30 a.m. - 6 p.m.
For 24-hour power outages or emergency service, call 1-800-434-1235
Standard Service supplied by Hydro One

Point of Delivery: 10710610

Compare the electricity you are using	Number of days	Average electricity you used per day (kWh)	Type of read
Nov 02, 2015 - Dec 02, 2015	30	2,330	Actual
Sep 01, 2015 - Nov 02, 2015	62	4,762	Actual
Jul 31, 2015 - Sep 01, 2015	32	4,882	Actual
Jul 03, 2015 - Jul 31, 2015	28	4,597	Actual
Jun 02, 2015 - Jul 03, 2015	31	4,855	Actual
May 04, 2015 - Jun 02, 2015	29	5,650	Actual
Oct 31, 2014 - Dec 01, 2014	31	5,150	Actual

Point of Delivery: 10710610

Compare the electricity you are using	Number of days	Average electricity you used per day (kWh)	Type of read
Nov 02, 2015 - Dec 02, 2015	**30**	**2,330**	**Actual**
Sep 01, 2015 - Nov 02, 2015	62	4,762	Actual
Jul 31, 2015 - Sep 01, 2015	32	4,882	Actual
Jul 03, 2015 - Jul 31, 2015	28	4,597	Actual
Jun 02, 2015 - Jul 03, 2015	31	4,855	Actual
May 04, 2015 - Jun 02, 2015	29	5,650	Actual
Oct 31, 2014 - Dec 01, 2014	**31**	**5,150**	**Actual**

Your account number: **200068297465**

saveONenergy℠
PROCESS & SYSTEMS

List of Measures that you wish to apply for: (attach and submit additional pages if necessary)

Measure #	Summary of scope of work for each Measure	Hours of operation of the System [hours/year]	Annual consumption of the System [MWh/year]	Estimated Annualized Electricity Savings [MWh/year]	Estimated electricity bill savings ("BS") [$/year]	Estimated other benefits ("OB") [$/year]	Estimated Project benefits (BS+OB) [$/year]	Estimated Eligible Costs [$/year]	Proposed installed costs [$/year]
1	Aeration Blower	8760	1353.6	653	$78,360	$2,000	$80,360	$210,000	$210,000
2									
3									
4									
5									
6									
7									
TOTAL				652.8	$78,360	$2,000	$80,360	$210,000	$210,000

PROJECT OR SMALL CAPITAL PROJECT SUMMARY

List of Projects that you wish to apply for in the : *(Attach and submit additional pages if necessary)*

Project #	Annualized Electricity Savings [MWh]	Project Incentive (Annualized Electricity Savings x $200/MWh) [$]	Project Incentive based on 70% of total Eligible Costs [$]	Project Incentive based on a min. 1 year Project Payback [$]	Project Incentive (Minimum of B, C, D) [$]	Actual Project Incentive [$/MWh]	Estimated Project Benefits [$/Year]	Estimated Eligible Costs [$]	Third Party Contributions [$]	Project Payback [years]
	A	B = A*200	C = H*70%	D = H-I-G	E = MIN(B,C,D)	F = E/A	G	H	I	J = (H-I-E)/G
1	653	$ 130,560	$ 147,000	$ 129,640	$ 129,640	$ 199	$ 80,360	$ 210,000	$ -	1.00

Printed on recycled paper 02 (front) rev. 07/11 pr. 10/15

Sulzer HST – built to perform

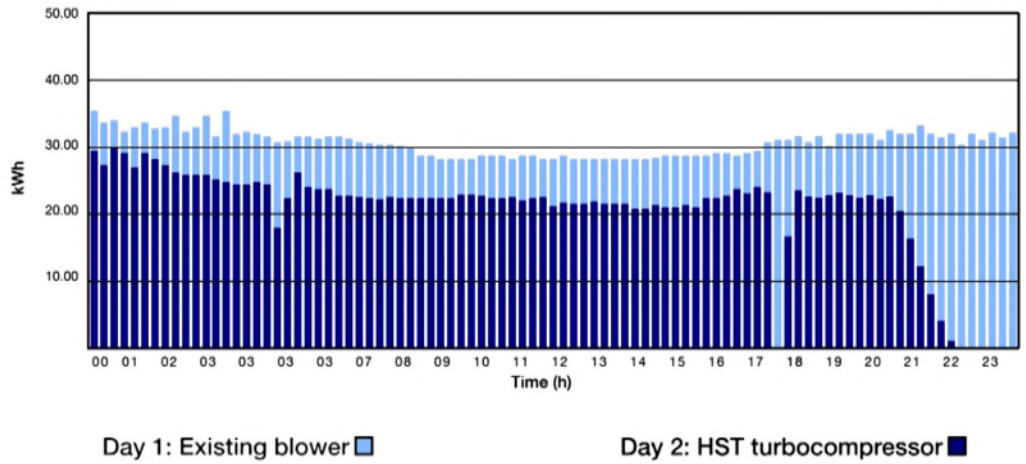
Sulzer HST had to displace the efficient single stage and multi stage centrifugal blowers to gain it’s place in the market

Sulzer HST

Built to perform

High efficiency guarantees optimal life cycle costs

- Single impeller design ensures maximum efficiency
- The high-speed motor is designed to match the required speed of the impeller
- The result is the highest efficiency in the market



Sulzer HST

Built to perform

Low-noise operation eliminates the need for additional soundproofing

- Silent operation is integrated into the design
- Integrated silencers remove the noise without adding to installation cost
- The lowest noise level of any blower by some margin

Sulzer HST – built to last

Sulzer HST uniquely combines magnetic bearings and 100 % air cooling to provide unprecedented hassle free operation and long lifetime of equipment

Sulzer HST

Built to last

Magnetic bearings reduce operating and maintenance costs

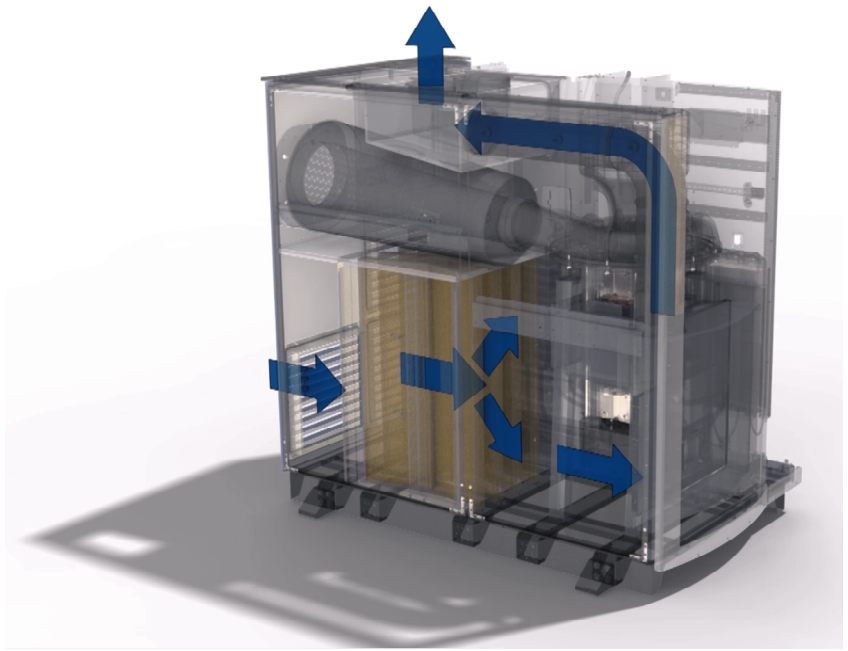
- No physical contact between rotating and stationary components means no mechanical friction or wear
- Proven oil-free magnetic bearing technology eliminates the need for lubrication and makes the bearings maintenance free
- Real-time monitoring built in for maximum safety

Sulzer HST

Built to last

Fully air-cooled design for optimized safety

- No liquid inside the machine eliminates the risk of leakage or any external contamination
- No pump, no heat exchanger, no fan
- Nothing that can freeze, boil or needs regular changes



Sulzer HST – built for Canada

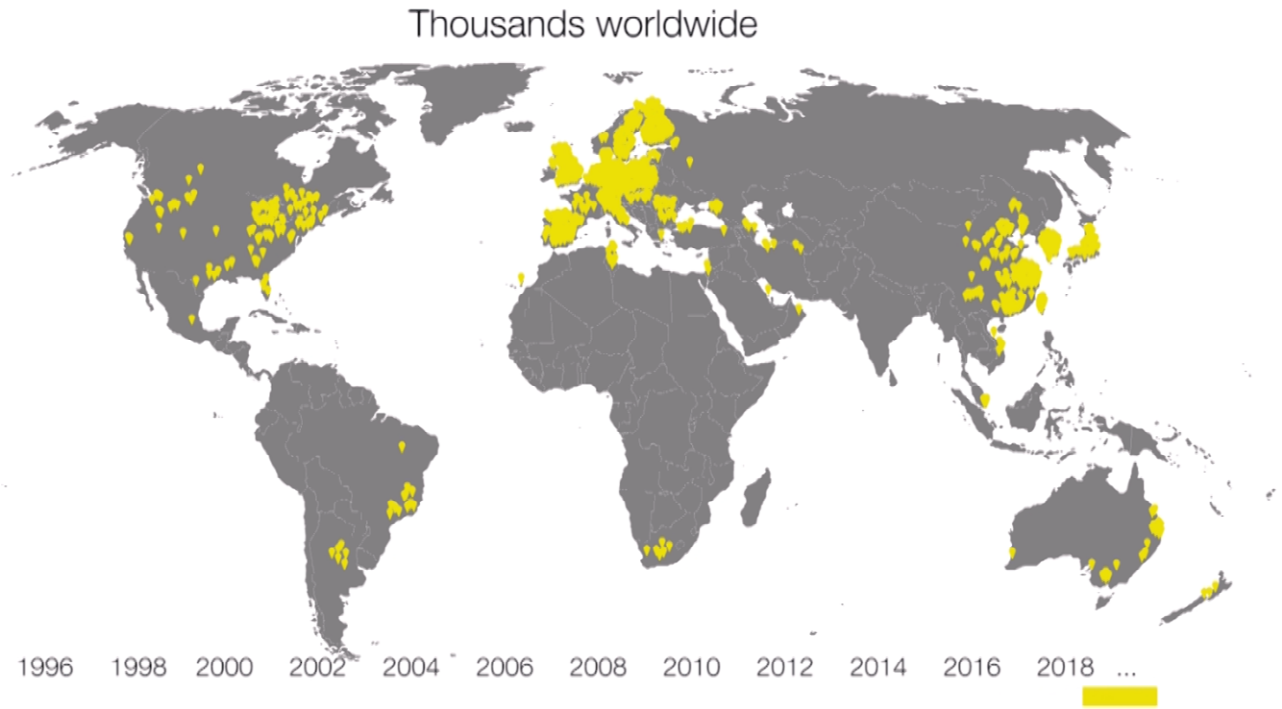
Designed in a country straddling the arctic circle, the Sulzer HST is uniquely adapted to Canadian standards

Sulzer HST

Built for Canada

Thousands of units installed worldwide

- 25 years since the first delivery
- Hot and cold climates
- Many units working more than 20 years



Sulzer HST

Built for Canada

Fulfilling Canadian expectations

- Listed as a complete unit by CSA and the UL for compliance with Canadian electrical safety regulations
- 580 V model with no need for extra transformer
- Sulzer has long-lasting and sizeable footprint on Canadian soil

Sulzer HST

What we can offer

- Longest history of designing and building high speed turbo blower with magnetic bearing technology
- Thousands of units installed globally
- The first units were installed in 1996 and are still running
- Solid engineering and local support
- Dedicated factory trained service technicians
- Sulzer owned service centers in Toronto, Edmonton and Burnaby, BC

SULZER CONFIDENTIAL

Questions and comments?