



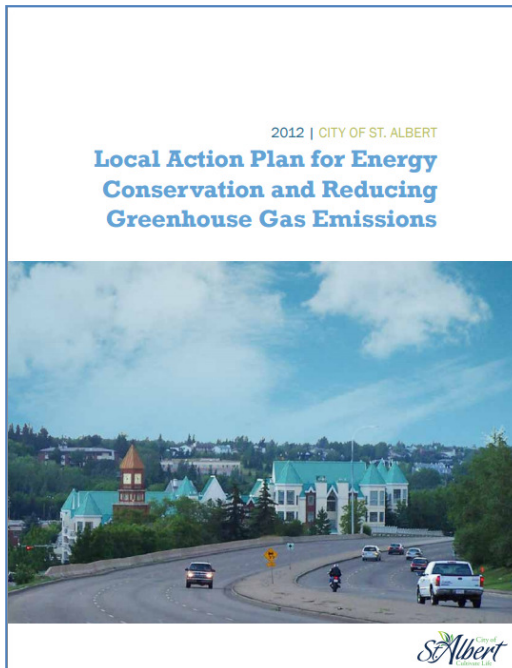
GOAL #2: REDUCE ENERGY CONSUMPTION AND GREENHOUSE GAS EMISSIONS

Targets:

- Achieve 20 per cent reduction of total corporate greenhouse gas emissions from 2008 levels by 2020.
- Achieve six per cent reduction of total community greenhouse gas emissions from 2008 levels by 2020.

Initiatives:

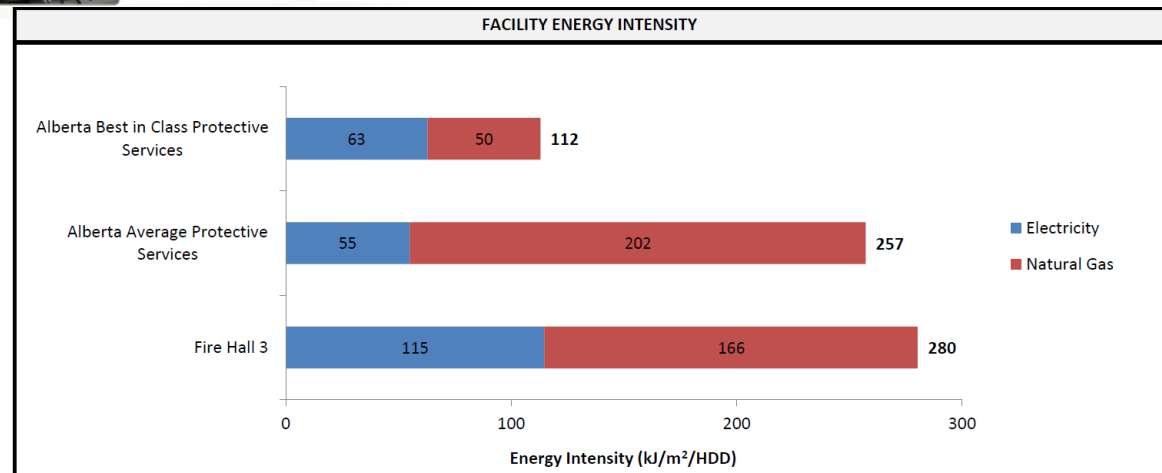
- 2.1 Partners for Climate Protection
- 2.2 Local Action Plan for Energy Conservation and Reducing Greenhouse Gas Emissions
- 2.3 Initiatives from other St. Albert plans
- 2.4 Community education and incentive initiatives



Action Planning for City of St. Albert Buildings and Facilities

Action	Level of effort / budget	Timeline	Funding Sources
Adopt a corporate Green Building Policy that includes minimum energy performance for new City buildings.	Less than \$50,000	Short-term 2013-2014	Internal
Benchmark municipal building energy use with the MCCAC municipal benchmarking program.	Less than \$50,000	Short-term 2013-2014	N/A
Continue to conduct energy efficiency audits to identify cost-effective retrofits, and plan and implement energy upgrades for existing City buildings.	Between \$50,000 and \$100,000	Ongoing	Operations budget FCM Green Municipal Fund
Create a facility energy management system that includes training and feedback systems for building managers and operators, and a best management practice system such as BOMA BEST or LEED EBOM.	Less than \$50,000	Ongoing + one time certification	Operations budget
Pilot a behavioural change campaign to measure its effectiveness before broad deployment.	Between \$50,000 and \$100,000	Medium-term 2015-2016	Internal FCM Green Municipal Fund

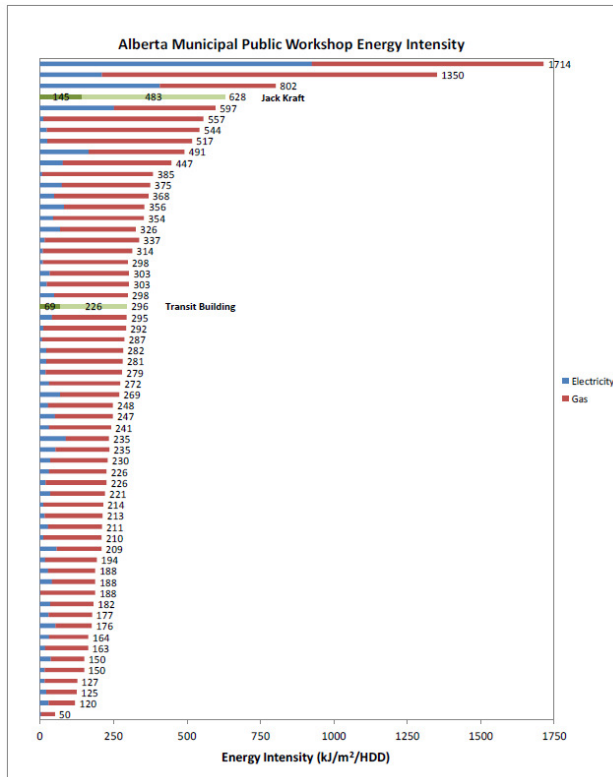
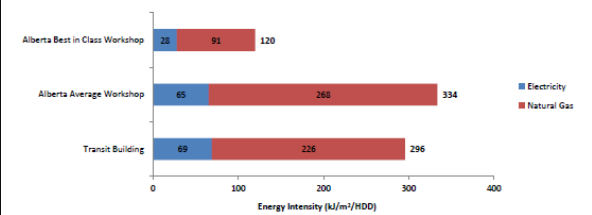
SUSTAINABLE BUILDING POLICY



BENCHMARKING



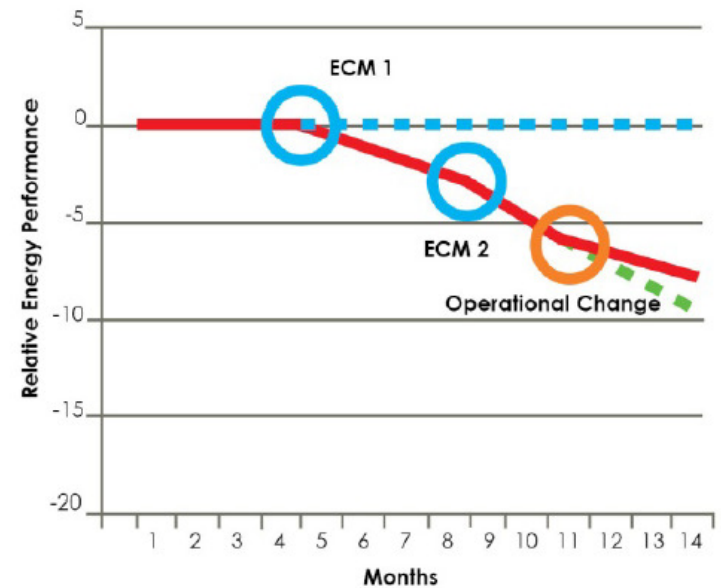
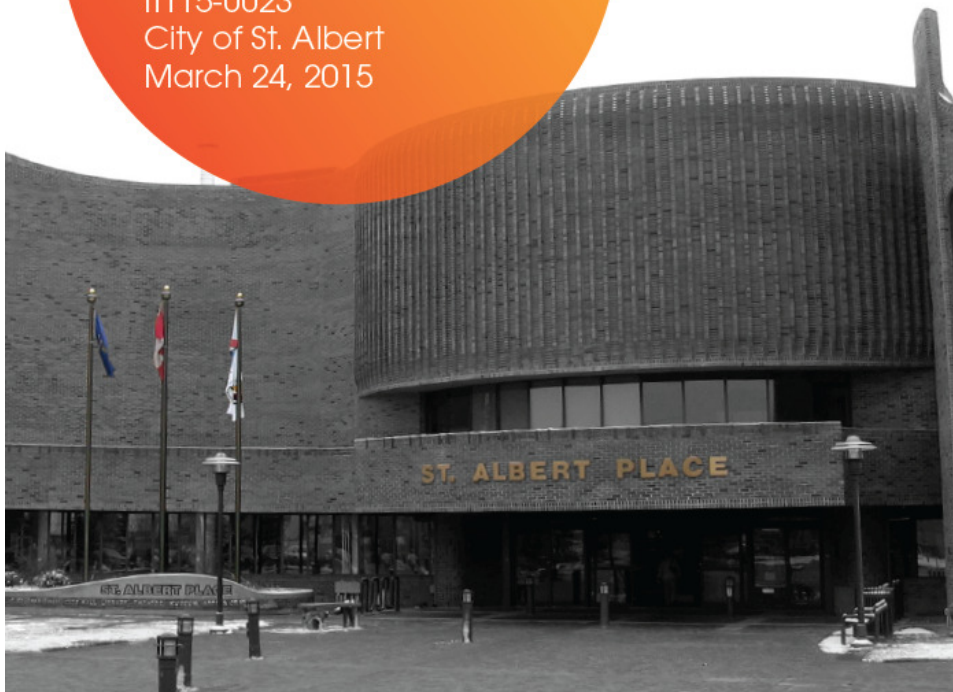
Building Information		Annual Electricity, Natural Gas and Water Use	
Municipality	City of St. Albert	Electricity	776,714 kWh
Building Name	Transit Building	Natural Gas	9,157 GJ
Address	225 Carnegie Dr	Water	8,570 m ³
Building Type	Workshop	Annual Energy Use in GJ	
Year Constructed	1985	Electricity	2,796 GJ
Conditioned/Heated Area (m ²)	7,607	Natural Gas	9,157 GJ
# of Occupants / FTEs	88	Total Energy Use	11,953 GJ
Benchmark Year	2013	Annual Energy Use Intensity	
Location Heating Degree Days (HDD)	5,316	Electricity Intensity	366 MJ/m ²
GHG Intensity		Natural Gas Intensity	1,204 MJ/m ²
Emissions from electricity	505 tCO ₂ e/yr	Total Energy Intensity	1,571 MJ/m ²
Emissions from natural gas	458 tCO ₂ e/yr	Energy Use Intensity Adjusted for HDD	
Total GHG emissions	963 tCO ₂ e/yr	Electricity Intensity	69 kJ/m ² /HDD
GHG Emission Factor (Electricity)	0.65 tCO ₂ e/MWh	Natural Gas Intensity	226 kJ/m ² /HDD
GHG Emission Factor (Natural Gas)	0.05 tCO ₂ e/GJ	Total Energy Intensity	296 kJ/m ² /HDD
Potential Annual Energy Savings		POTENTIAL SAVINGS IF ENERGY EFFICIENCY MATCHES THE MOST EFFICIENT MUNICIPALITY	
Potential Annual Savings on Electricity	59%	Assumed Electricity Price	\$ 0.10 per kWh
Potential Annual Savings on Natural Gas	60%	Potential Annual Savings on Electricity	\$ 46,000
		Assumed Natural Gas Price	\$ 5.00 per GJ
		Potential Annual Savings on Natural Gas	\$ 27,288
		Potential GHG reductions by reducing electricity consumption (tCO ₂ e/year)	299
		Potential GHG reductions by reducing natural gas consumption (tCO ₂ e/year)	273



ENERGY & WATER AUDITS

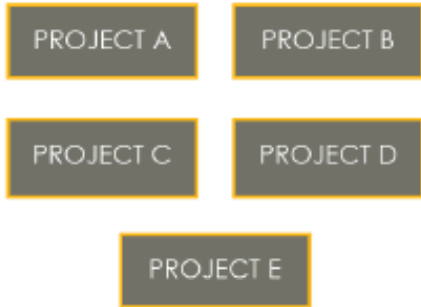
Facility Energy and Water Audits

ITT15-0023
City of St. Albert
March 24, 2015



BUSINESS CASE APPROACH & METRICS

1 EVALUATE THE PROJECTS



2 SCORE THE PROJECTS



- CRITERIA EVALUATIONS**
- Financial
 - Environmental
 - Social

3 RANK THE PROJECTS

1.	PROJECT B	=	98
2.	PROJECT D	=	90
3.	PROJECT A	=	85
4.	PROJECT E	=	85
5.	PROJECT C	=	70



RENEWABLE ENERGY

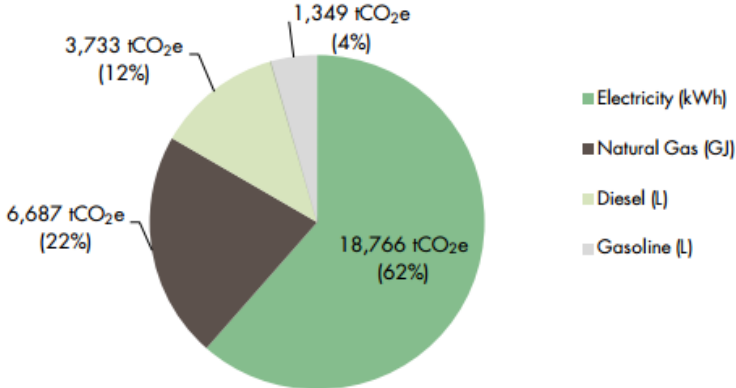
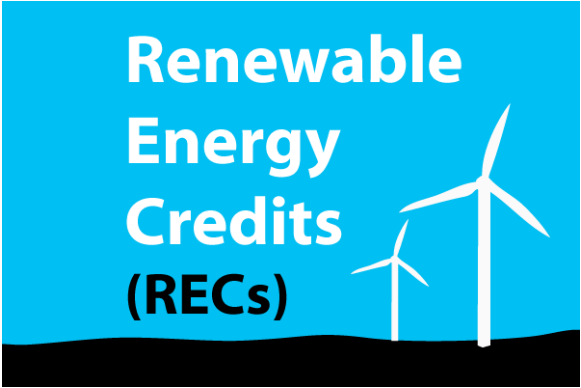


Figure 4: Corporate GHG Emissions by Source (2008)



Figure 1: Municipal Government "Spheres of Influence"