Ontario Cost-Benefit Analysis Tool

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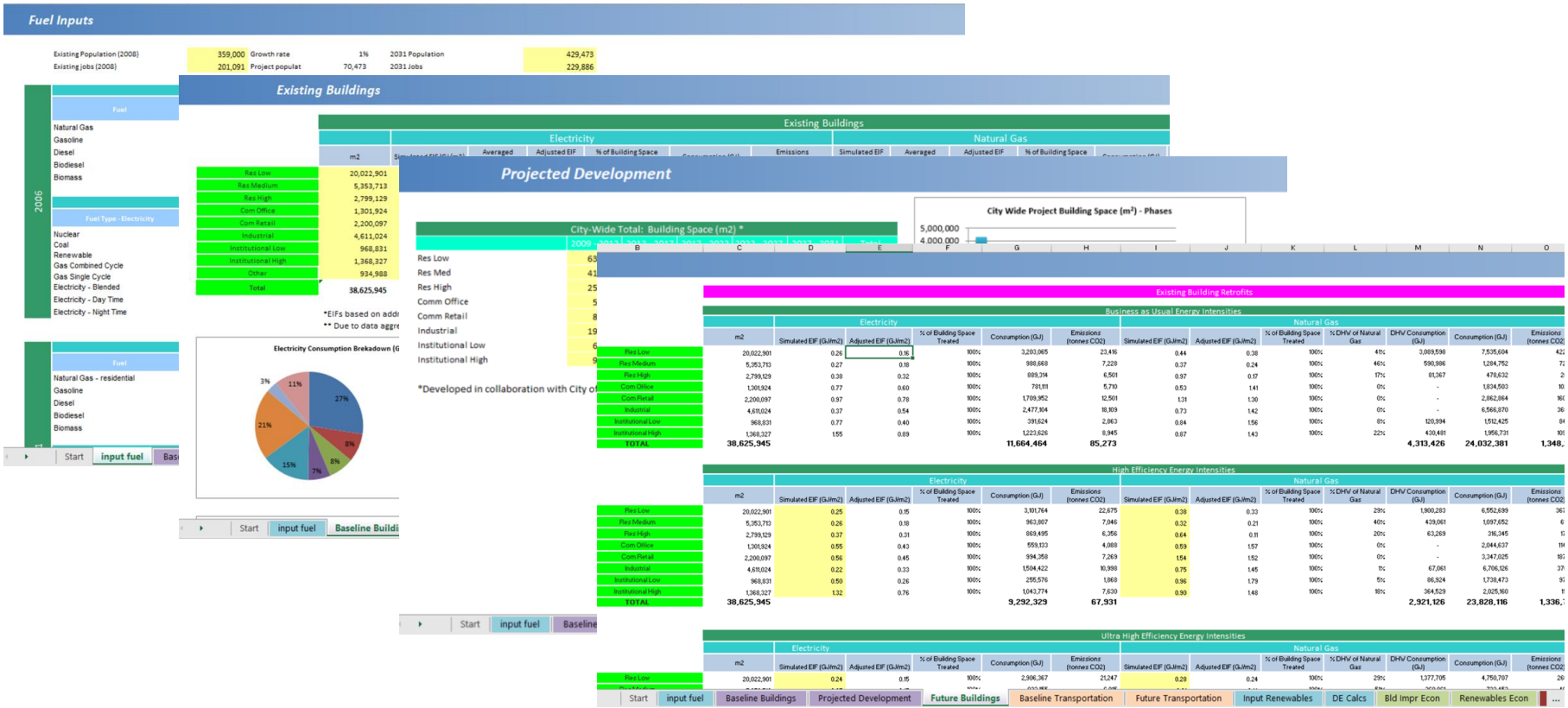
BACKGROUND

- Originally developed by the Canadian Urban Institute (CUI) under the Integrated Energy Mapping for Ontario Communities (IEMOC) project in 2011

- Used to predict **energy reduction, GHG and ROI of various building and transportation scenarios, and distributed energy resources (DERs)** compared to Business-As-Usual

- QUEST Ontario Municipal Working Group to assess the scope of a potential update and assessing level of effort needed

THE COST-BENEFIT ANALYSIS TOOL



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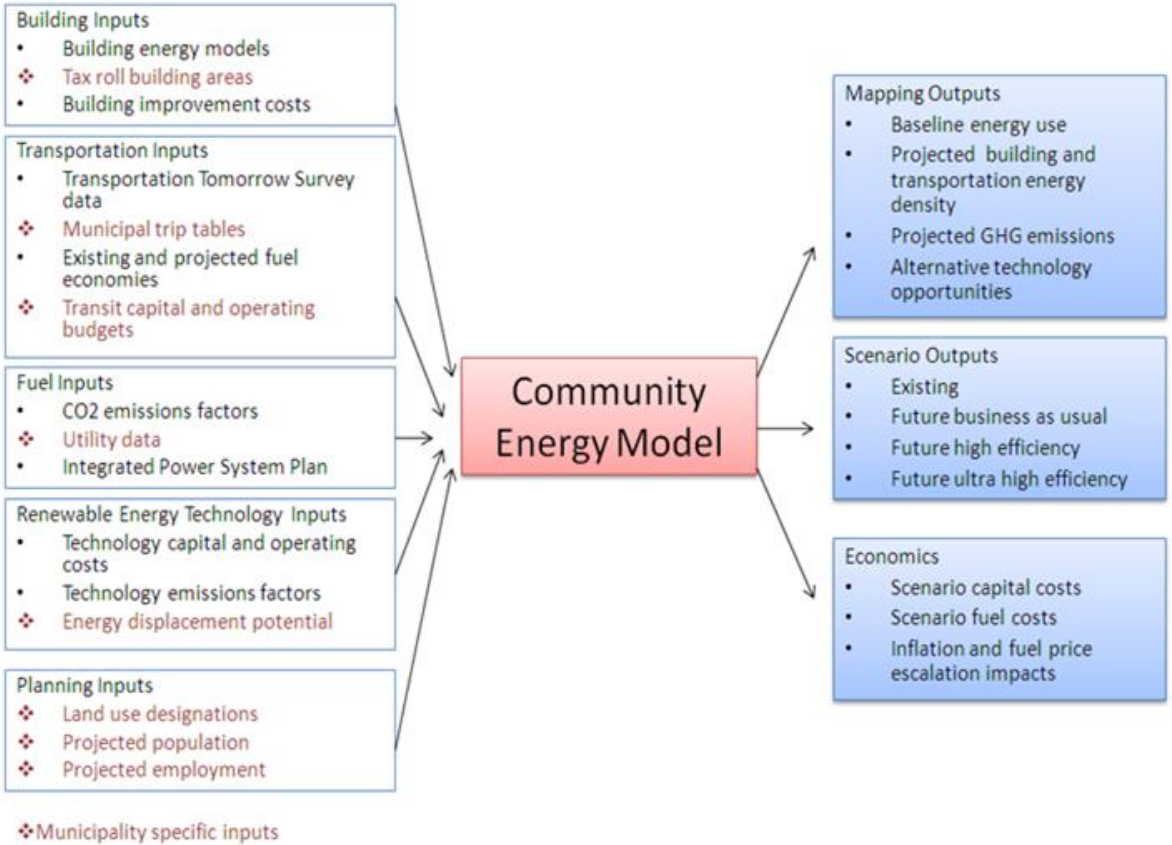

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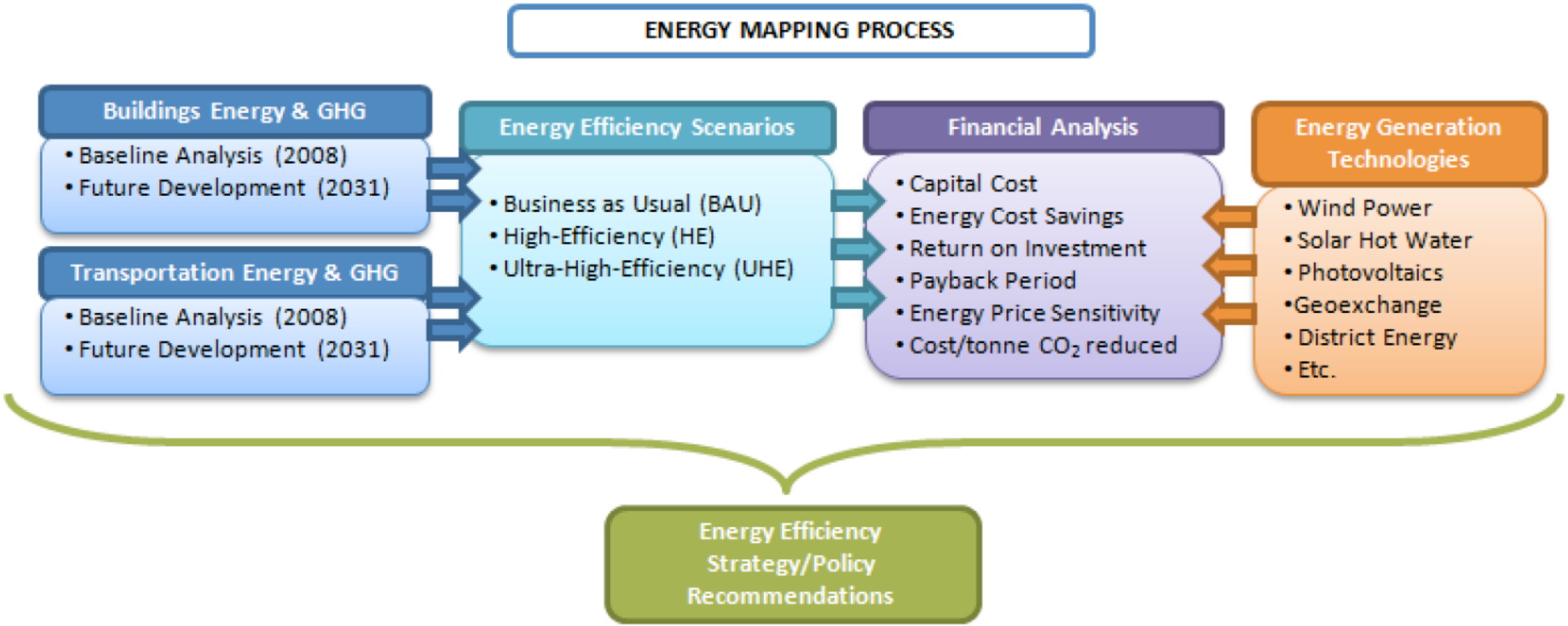
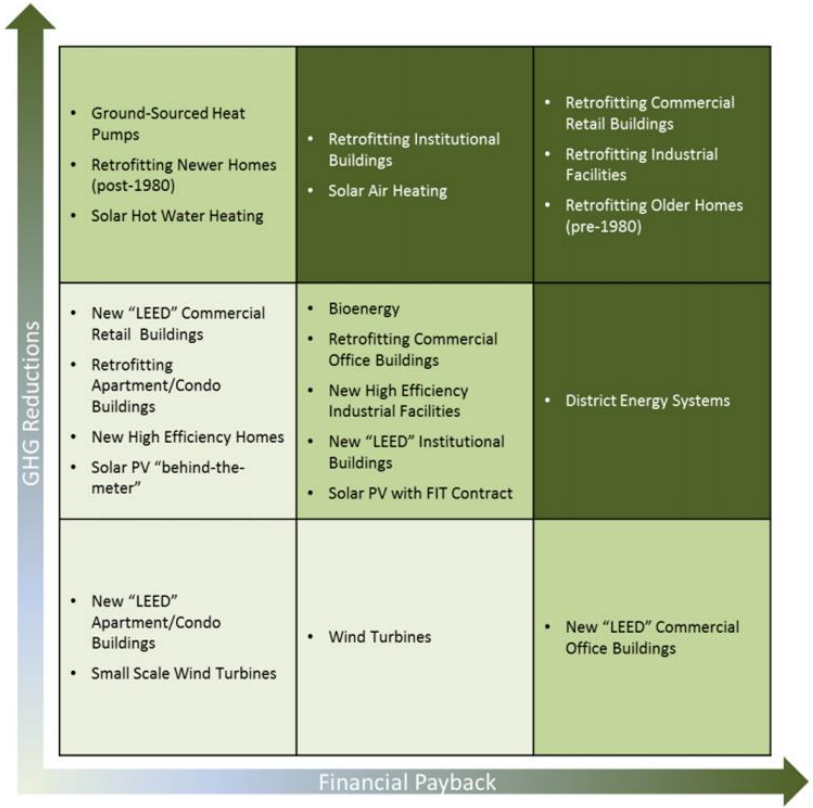


APPLICATIONS



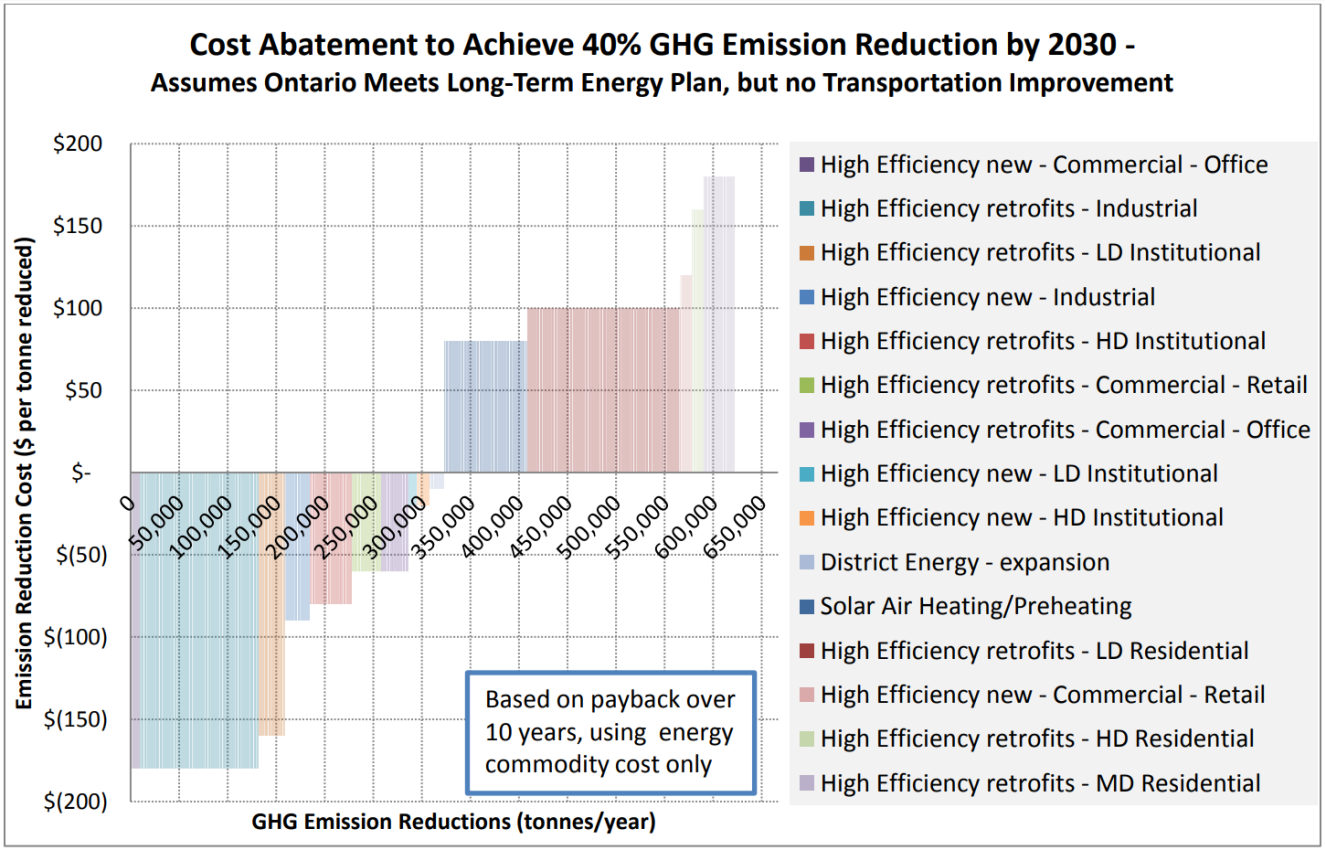
London's Community Energy Action Plan:

APPLICATIONS

Office - New								
E Cost BAU			12.44	13.32	13.56	13.76	14.08	14.36
E Cost HE			7.89	8.38	8.53	8.67	8.86	9.04
E Cost UHE			7.26	7.68	7.82	7.95	8.12	8.29
	CAP		E - Save					
HE vs BAU	$	(26.11)	4.55	4.94	5.03	5.10	5.22	5.32
UHE vs BAU	$	(52.09)	5.18	5.64	5.74	5.82	5.96	6.08
UHE vs HE	$	(25.98)	0.63	0.70	0.71	0.72	0.74	0.76
	IRR		Payback (Yrs)					
HE vs BAU		20%	4					
UHE vs BAU		11%	8					
UHE vs HE		-3%	-					
Office - Retro Existing								
E Cost BAU			17.60	18.83	19.16	19.45	19.90	20.30
E Cost HE			14.97	16.25	16.53	16.76	17.16	17.50

District Energy - Existing DT									
Income									
Elec Displaced		$ 4,442,268	$ 4,531,113	$ 4,621,735	$ 4,714,170	$ 4,808,453	$ 4,904,622	$ 5,002,715	$ 5,102,7
NG Displaced		$ 1,872,928	$ 2,185,083	$ 2,216,298	$ 2,231,906	$ 2,294,337	$ 2,341,160	$ 2,419,199	$ 2,575,
Elec to Grid		$ 6,225,635	$ 6,350,148	$ 6,477,151	$ 6,606,694	$ 6,738,828	$ 6,873,605	$ 7,011,077	$ 7,151,2
Capital Cost	$ 97,794,376	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$
Annual Costs									
O&M		$ 1,635,726	$ 1,668,441	$ 1,701,809	$ 1,735,846	$ 1,770,562	$ 1,805,974	$ 1,842,093	$ 1,878,9
Fuel - Elec		$ 305,907	$ 312,025	$ 318,265	$ 324,631	$ 331,123	$ 337,746	$ 344,501	$ 351,
Fuel - NG		$ 4,367,085	$ 5,094,932	$ 5,167,717	$ 5,204,109	$ 5,349,679	$ 5,458,856	$ 5,640,818	$ 6,004,
Net	$ (97,794,376.15)	$ 6,232,114	$ 5,990,947	$ 6,127,393	$ 6,288,185	$ 6,390,254	$ 6,516,812	$ 6,605,579	$ 6,594,2
IRR	3.83%								
Biomass									
Income									
Elec Displaced		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$
NG Displaced		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$
Elec to Grid		$ 19.40	$ 19.79	$ 20.18	$ 20.59	$ 21.00	$ 21.42	$ 21.85	$ 22

APPLICATIONS



City of London Understanding the Data: https://www.london.ca/residents/Environment/Energy/Documents/Understanding_the_Data.pdf

PROPOSED UPDATES

- **Updating assumptions**
- Update & add new technologies
- Updating user interface for user friendliness
- Re-piloting and updating municipal inputs

NEXT STEPS

1. **Stakeholder and consultant outreach**

1. Funding opportunity exploration

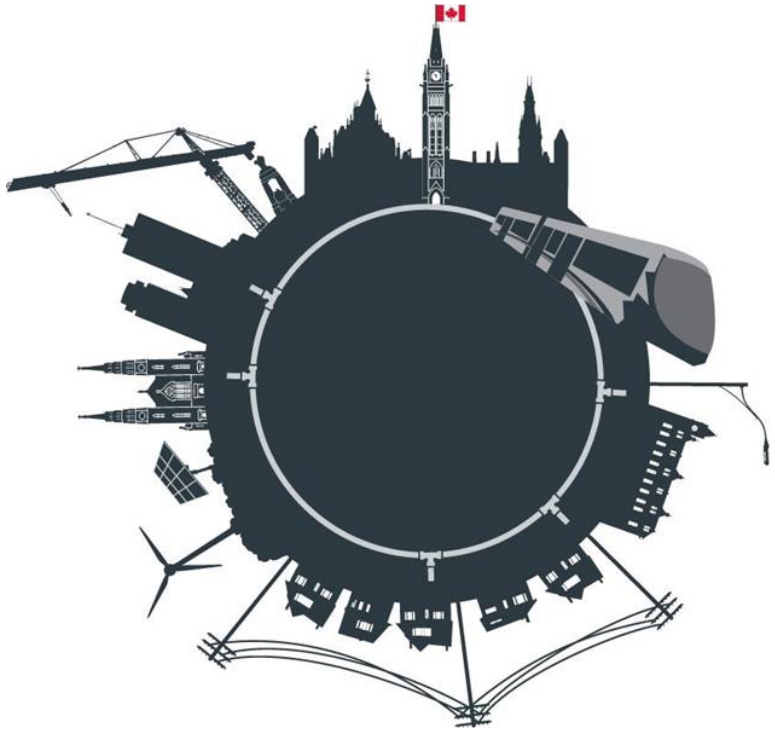
1. Detailed work plan

DISCUSSION QUESTIONS

1. Are there any similar tools being used in your jurisdiction?

1. Is an open-source approach viable for keeping assumptions relevant?

1. Is a broadly applicable, publicly available model necessary?



QUEST2017

Smart Energy Communities on the Hill

NOVEMBER 6-8 DELTA OTTAWA

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