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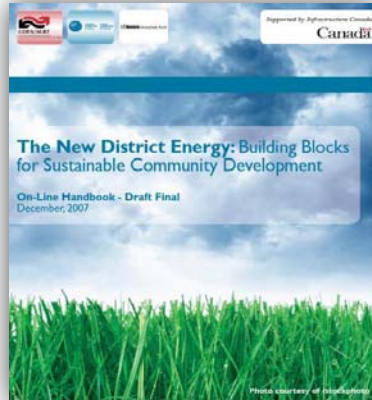
# Integrated Energy Planning

## A Role For Planners and Communities

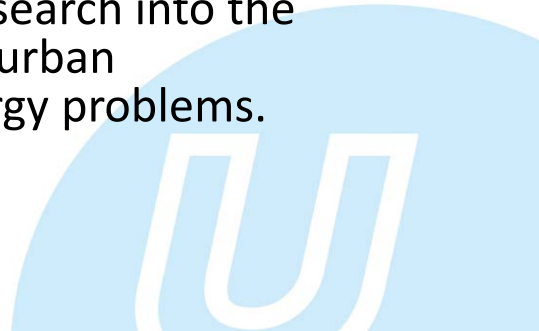
March 26, 2009



# Energy and the CUI



- The CUI is Canada's applied urban policy institute.
- We are engaged in Canada's movement to advance market transformation for sustainable communities and to encourage the application and integration of energy into the decision-making process at the municipal level.
- Since its inception, the Institute has led a visionary program of research into the long-term solutions for urban transportation and energy problems.



# Integrated Urban Energy Systems: A Role for Communities



- Energy has traditionally been planned by specialized agencies, such as local utilities and provincial agencies, such as the Ontario Power Authority.
- In addition, municipalities are involved in energy planning in two ways:
  - Directly, by establishing district energy corporations and other energy services (poles, wires).
  - Indirectly, by promoting compact urban mixed use development, transportation oriented development and other built form that supports IUES.



# Building Blocks For Integrated Urban Energy Systems



- Most energy-related decisions and impacts within a municipality start from specific policies and land-use decisions.

## Infrastructure and Land Use

(density, mixed use, energy supply infrastructure, transportation network)

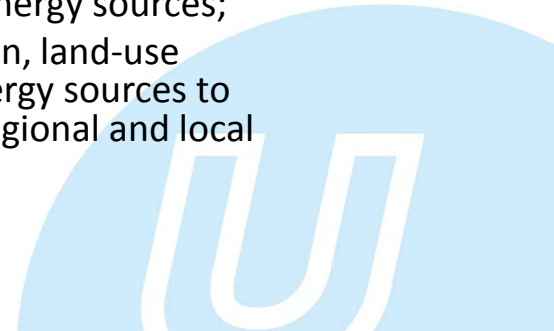
## Building and Site Design (industrial processes, transportation modes etc.)

## Energy Use Equipment (boilers, vehicles, industrial equipment)

# Planning For An Integrated Urban Energy System (IUES)



- Integrated community energy planning (ICEP) is becoming an established practice in Canada for connecting energy impacts with land-use decisions.
  - Some jurisdictions now require the development of an ICEP.
- ICEPs help to connect energy supply and end-use (transportation, water, waste etc) into the decision-making process by municipalities.
- ICEPs do this by providing a framework for:
  - Reducing energy demand within the built environment;
  - Encouraging the application of renewable energy sources;
  - Linking the built environment, transportation, land-use designations and renewable/alternative energy sources to inform long range planning for provincial, regional and local energy and land-uses.

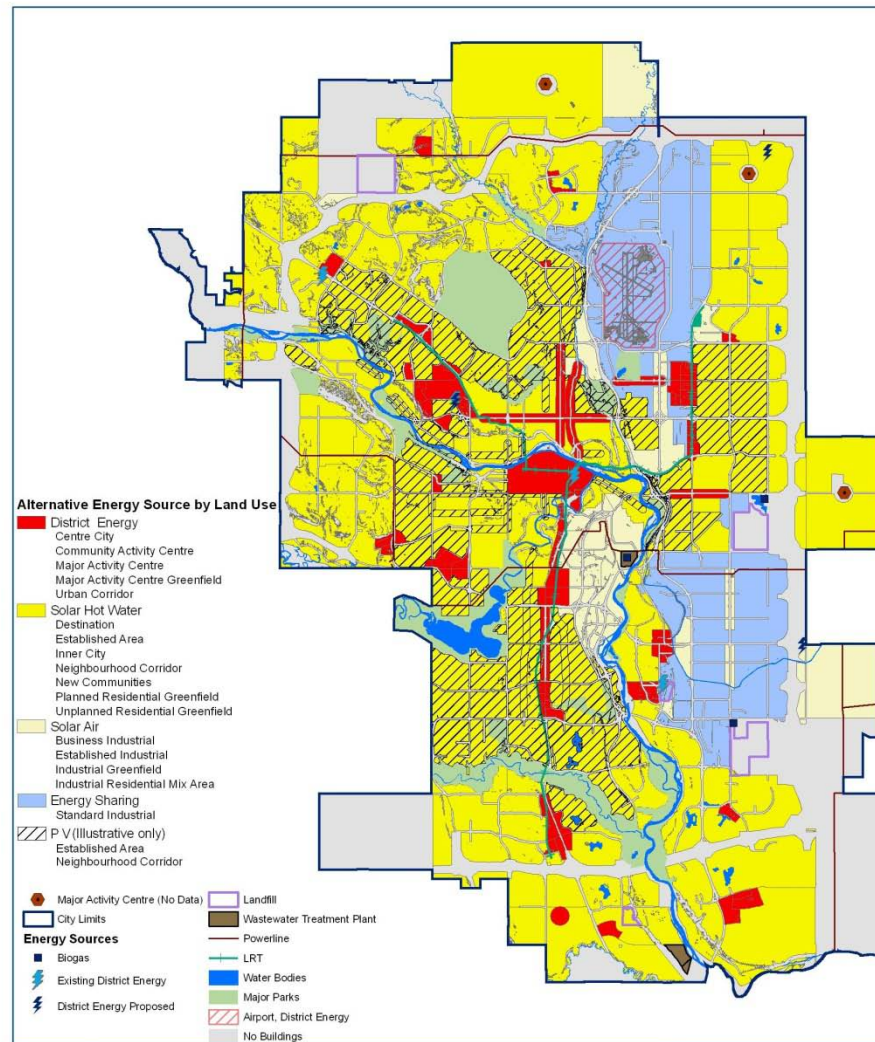




## What We Were Asked To Do

- Identify the types of alternative energy sources:
  - with the best ability to reduce greenhouse gas emissions in a cost effective manner;
  - appropriate for Calgary's climate and built form;
- Determine suitable locations for alternative energy sources in Calgary.
- Prepare an energy land-use map based on the results.
- Set out land use and mobility policies to support the implementation of the energy land-use map.
- Benefit of an energy land-use map is the ability to graphically illustrate energy consumption and provide a clear link to land-use strategies.





### Alternative Technologies Sources 2036

Coordinate System: UTM  
Datum: WGS 1984  
Scale: 1:185,000

Data Source: City of Calgary  
Date: December, 2008

# What Can the Federal Government Do to Help Communities Plan for IUES?



- Leadership
  - Ensure the role of communities is recognized in all federal strategies and plans to support IUES.
- Policy
  - Establish a standardized methodology (best approach) for measuring energy at the community level.
  - Conduct research to identify the potential cost savings from centralized energy infrastructure capital and operating costs.
- Technology/Decision Support
  - Ensure that comparable data for energy use and building is available for access to all municipalities across Canada.
- Capacity Building
  - Establish a dedicated community energy program to serve as a centre of excellence for best practices, knowledge exchange and technical support.
  - Expand funding for federal energy incentives program, such as ecoEnergy Retrofit ,to all appropriate building types.
- Market Stimulation
  - Make funding available for demonstration and early adoption of IUES systems.
  - Establish an incentive for district energy modeled on the ecoEnergy for Renewable Power incentive.