



Land Use Considerations for Alternative and Renewable Energy Systems

an Oxford Perspective

Growing the Margins Conference

April 13, 2007

Legislative Context

- The Planning Act, R.S.O. 1990
 - provides legislative authority for municipalities to regulate land use, based on a land use system led by provincial policy
 - Other legislation also plays a role in local planning decisions, such as the Nutrient Management Act and Environmental Protection Act
 - Section 3.(5) requires that all planning decisions be 'consistent with' the Provincial Policy Statement (PPS)

Provincial Policy

- Provincial Policy Statement (PPS)
 - Current PPS came into effect on March 1st, 2005
 - Provides policy direction on matters of provincial interest related to land use planning and development
 - Supersedes municipal planning documents in case of conflict
 - Municipalities may adopt stricter standards, provided they do not conflict with any policy of the PPS

PPS Policies - Alternative and Renewable Energy

Section 1.7 Long Term Economic Prosperity

- 1.7.1 ...provide opportunities for increased energy generation, supply and conservation including *alternative energy systems* and *renewable energy systems*

Section 1.8 Energy and Air Quality

- 1.8.2 ...providing opportunities for energy generation facilities to accommodate current and projected needs, and the use of renewable energy systems and alternative energy systems, where feasible
- 1.8.3 *Alternative energy systems* and *renewable energy systems* shall be permitted in *settlement areas*, *rural areas* and *prime agricultural areas* in accordance with *provincial and federal requirements*. In *rural areas* and *prime agricultural areas*, these systems should be designed and constructed to minimize impacts on agricultural operations

Municipal Planning Framework

■ Official Plan (OP)

- Municipal policy document which provides the long term guide for growth and development and guides local land use and infrastructure decisions
- Primary vehicle for implementation of the PPS through establishment of locally tailored policy
- Subject to a comprehensive review every 5 years

■ Zoning By-Law (ZB)

- Implements the policies of the OP and provides for its day-to-day administration
- States exactly how land may be used, where buildings and other structures can be located, types of buildings permitted, lot size, parking requirements, building heights, setbacks etc.

■ Site Plan Control (SPC)

- Provides for detailed site design controls to help ensure developments have adequate access, landscaping, parking and drainage, meet quality and appearance standards, and are appropriately sited and buffered to achieve compatibility with neighboring uses

■ Building Permit (BP)

- Formal approval to construct, add to, or renovate a building on your property
- Can only be issued in compliance with the Building Code, Zoning By-Law and Site Plans

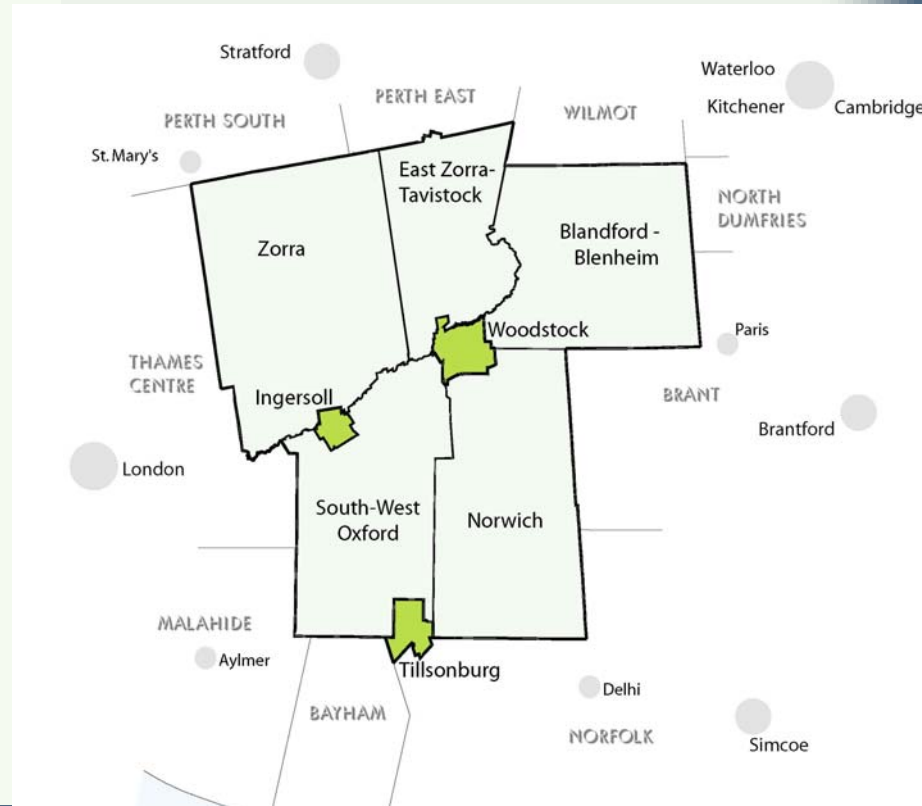
Oxford County Context

■ Location and Structure

- Located along the 401 corridor, between London and Kitchener-Waterloo
- Population just over 100,000
- Comprised of 8 municipalities
 - Woodstock, Tillsonburg and Ingersoll
 - 5 rural Townships

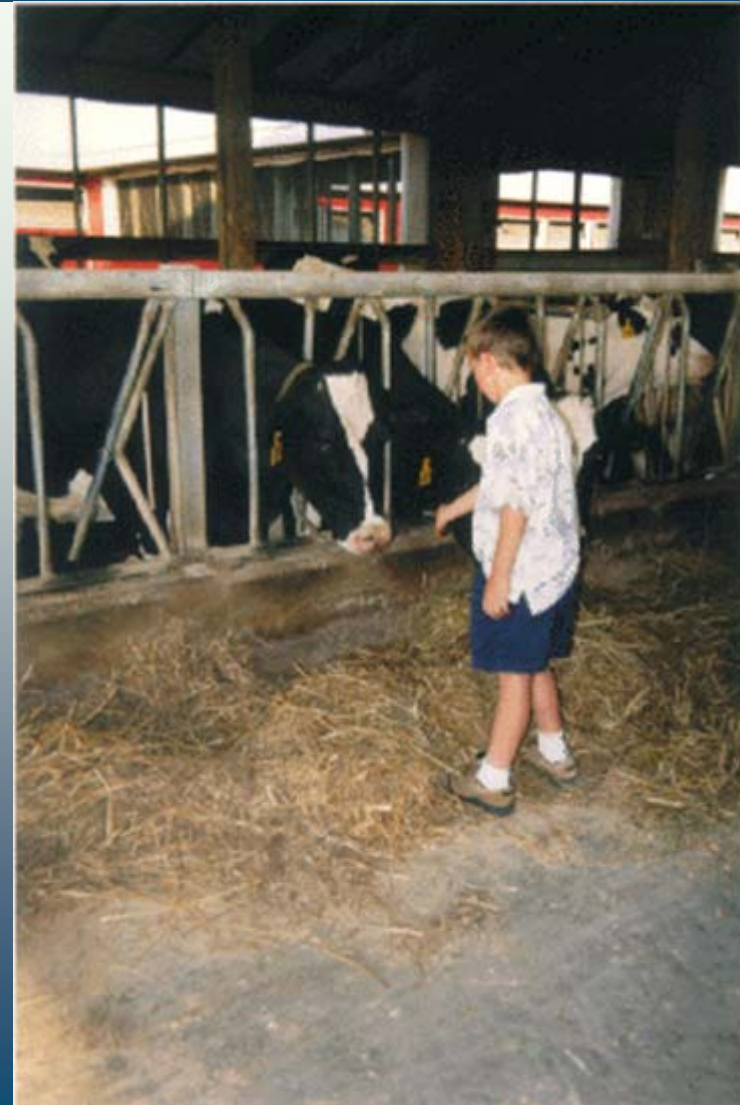
■ Agriculture in Oxford

- Prime agricultural area with over 90% of agricultural land being Class I-III
- In 2001, Oxford farms were, on average, the second most productive in Ontario
- In 2001, the agricultural industry was the most important employer in the County



Prime Agricultural Area Policies

- Oxford County Official Plan (OP)
 - Serves as the OP for the County and 8 area municipalities
 - Strong agricultural policies which provide for secondary and agricultural related uses which are supportive of agriculture
 - Currently silent on alternative and renewable energy systems
- PPS Official Plan Review
 - Considering amendments to allow for A & R energy systems in appropriate locations within prime agricultural and settlement areas
 - Policy approach tailored to Oxford County
 - Generally supportive of on-farm scale systems, with larger systems subject to appropriate locational justification



Alternative & Renewable Energy Land Use Policies and Research

- Existing Municipal Policies for A & R energy
 - A number of Ontario municipalities have comprehensive policies and zoning requirements for wind energy generating systems
 - A few pilot projects and site specific applications for other A & R energy systems in SW Ontario, however, little comprehensive policy yet developed
 - To date, our inquiries have primarily been for small wind, solar & ethanol
- A & R Energy Systems Being Reviewed
 - Biogas Energy Generating Systems – Anaerobic Digesters (AD)
 - Solar Energy Generation Systems (SEGS)
 - Wind Energy Generation Systems (WEGS)
 - Biomass Combustion Systems (BCS)
 - Bio-diesel and Bio-fuels
 - Geothermal Energy Systems (GES)

Land Use Considerations

■ Compatibility & Suitability

- Noise, vibration and safety
- Traffic generation and access
- Siting, height and setbacks
- Screening and buffering
- Scale and use restrictions
- Aesthetics and view sheds
- Odour concerns e.g. Minimum Distance Separation (I and II)

■ Environmental Resources and Constraints

- Preservation of agricultural land
- Protection of mineral & petroleum resources
- Water quality and quantity
- Natural heritage features e.g. woodlands, wetlands, fish habitat, ANSI's etc.
- Cultural heritage e.g. cultural landscapes, archeological etc.
- Natural hazards e.g. flood plains, erosion hazards

Locational Considerations

■ Location and Infrastructure Requirements

- Topography and obstructions (trees, buildings etc.)
- Proximity to resource or inputs e.g. wind, manure etc.
- Agricultural vs. settlement area e.g. noise, odour etc.
- Municipal services e.g. sewer, water, fire protection
- Land area requirements
- Use of existing transmission lines vs. new corridors
- Transportation
 - Road Standard (seasonal load restrictions)
 - Rail access

■ Other Approvals

- Nutrient Management Act – Nutrient Management Strategy
- MOE Certificates of Approval (noise, operational etc.)
- Other approvals (Ontario Energy Board, Env. Assessment, Transport Canada)
- Building Permits/Structural

Municipal Review and Approvals

- Goal of A & R energy policies should be to:
 - Ensure all land use considerations are identified and addressed
 - Provide a level of certainty to proponents and the public
 - Provide opportunities for diversification of agricultural operations while ensuring non-agricultural uses are directed to settlement areas, wherever feasible
 - Balance provincial interests by promoting A & R energy in appropriate locations, while respecting the protection of environmental features and resources, public health and safety and compatibility with adjacent uses

Agricultural Policy Framework

- A & R Energy Systems in Prime Agricultural Areas
 - Subject to compliance with environmental resource and constraint policies
 - New infrastructure only permitted where approved through an EA process

- 1. Small scale on-farm ('as of right')
 - Nature and scale of the system is clearly secondary and ancillary to the farm operation, and does not alter the principle use for agriculture.
 - Restrictions on size, scale and land area e.g. <0.8 ha or 10% of lot area.
 - Do not generally require additional employees for operation
 - Located in close proximity to the principal farm buildings, where feasible
 - Subject to zoning compliance and building permit. May require site plan
 - No public process. Where site plan required approx. 45 days for approval

Agricultural Policy Framework Cont.

2. Larger scale on-farm (on-farm diversified use)
 - Similar to small on-farm, except the system is of sufficient size or scale to require more detailed review and public consultation. e.g. location, size, scale, traffic
 - May require additional employees to operate system
 - May supplement farm income by selling excess power
 - Subject to re-zoning (public process, 3-4 months), site plan approval (approx. 45 days) and building permit

Agricultural Policy Cont.

3. Commercial/Industrial Scale (Agriculture related)

- Large scale systems which may not be part of an agricultural operation
- Generally supportive of agriculture and unable to function successfully or properly without a location in proximity to agriculture, or demonstrate significant incompatibility with settlement uses
- Directed to existing non-agriculturally zoned sites, or where not available:
 - to existing undersized agricultural parcels which constrain agricultural activity
 - areas made unsuitable for agriculture by former or surrounding land uses, and
 - to sites with lower capability agricultural soils e.g. Class 5-7
- Occupies the minimum land area required to function properly
- Located on a road capable of handling anticipated traffic
- Complies with MDS I (and MDS II in case of AD system)
- Subject to rezoning (4-6 months), site plan (45 days) and building permits

Biogas Energy Systems – Anaerobic Digesters (AD)

- Devices for the anaerobic digestion of organic materials (e.g. manure, harvest residues) to reduce pathogens and produce biogases (e.g. methane) for energy production (heat & electricity)
 - On-farm AD
 - Use only farm sourced input material originating from the farm unit on which the system is located.
 - Scale restrictions e.g. maximum generating capacity of 500 kW (el).
 - Permit in agricultural zones subject to compliance with zoning provisions related to location, size and scale, setbacks, MDS etc.
 - On-farm mixed AD
 - Use primarily farm sourced input material from the farm unit on which the system is located (min. 50% manure) and limited non-farm sourced material e.g. up to 25% by volume and max. 5,000 m³/year
 - Restrictions on storage of off-farm input material e.g. max. 100 m³
 - May permit in agricultural zones subject to site plan approval & possible rezoning (awaiting proposed NMA changes)

Biogas Energy Systems – Anaerobic Digesters (AD)

- Centralized AD Systems
 - Large scale systems with input materials collected from multiple farm units and non-farm sources e.g. yard and food waste
 - Non-farm sourced input material may exceed 5,000 m³/year
 - Systems utilizing primarily agriculturally sourced input material may be considered subject to a site specific zoning to address:
 - Locational justification as per agricultural related industrial uses
 - MOE approvals, plan of operations, disclosure report
 - Setbacks from settlement areas and other sensitive land uses
 - Impact on environmental resources and constraints
 - Traffic impacts and servicing requirements
 - Also subject to site plan approval and building permits

Solar Energy Generating Systems (SEGS)

- Devices designed to convert energy from the sun into thermal or electrical energy
 - Individual SEGS
 - Primarily intended to generate electricity to off-set or replace on-site domestic consumption for an individual use e.g. house and barns
 - Permit fixed, roof mounted panels in all zones. Small scale tracking tower systems may also be permitted in some zones
 - Subject to location, height, setback, max. area provisions in Area Zoning By-Laws
 - Proposals involving tracking towers may be subject to site plan control to address location, design, accessory buildings, fencing, screening etc.

Solar Energy Systems Cont.

■ Commercial SEGs

- Larger scale systems intended to sell electricity to the grid
- Not necessarily associated with a farm operation
- May be permitted subject to rezoning to address the following:
 - Locational justification as per agricultural related industrial uses
 - Designed and approved by a professional engineer
 - Minimize disruption to agricultural uses and normal farm practices
 - Setbacks from settlement areas and other land uses
 - Impact on environmental resources and constraints
- Site plan approval required to address location, design, landscaping and buffering, outdoor storage, accessory buildings and facilities, fencing, traffic and access, grading and drainage etc.

Other A & R Energy Systems

- Wind Energy Generating Systems (WEGS)
 - Permit small scale WEGS e.g. <500 kW subject to zoning compliance and building permits
 - Commercial scale >500kW subject to rezoning & studies, site plan etc.
- Biomass Combustion
 - Permit on-farm scale systems subject to zoning provisions and B.P.'s
 - larger scale systems to be reviewed as per agricultural industrial uses
- Biodiesel and Biofuels
 - Reviewing potential for on-farm scale systems
 - Larger scale systems to be reviewed as per agricultural industrial uses
- Geothermal
 - Permit chemical free systems subject to area zoning requirements e.g. setbacks, WHPA's etc. and building permits

Challenges and Next Steps

■ Challenges

- Relatively new policy issue with minimal local experience
- New and evolving technologies and operational considerations
- Minimizing use of prime agricultural lands
- Establishing appropriate scale thresholds
- Public concerns and involvement e.g. 'as of right' vs. 'rezoning'

■ Next Steps

- Finalize draft policies, agency consultation and public review
- Develop related zoning provisions, application submission requirements and site plan guidelines
- Review and update on ongoing basis through 5 year OP review

Questions, Feedback and Additional Information

■ Contact:

Paul Michiels, Senior Policy Planner

Community & Strategic Planning Office

County of Oxford

415 Hunter Street

Woodstock, Ontario N4S 7Y3

(519) 539-9800 Ext. 3209

Email: pmichiels@county.oxford.on.ca



■ Website: www.county.oxford.on.ca