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No. 03

Our Constrained Energy Future
Part Two: Reducing Demand for Oil and Gas in Our Cities

Based on current trends, the global energy future has been described by the International Energy Agency as being "dirty, insecure and expensive", unless strong policy action is taken. In particular, prospects for the adequacy of crude oil supplies are generally being seen as increasingly grim. Growing numbers of energy analysts are expecting that there will be a "peak oil" situation in the near future, where crude production will level off and begin to decline. Analysis by Uppsala University in Sweden puts the actual peaking as early as 2008. The result will be erratic yet dramatic increases in the price per barrel of crude oil, and at the retail level, regardless of efforts to bring alternative fuels to market. Despite the accumulating evidence that production will peak soon, there is no consensus emerging on how to use the remaining supplies in a strategic and logical manner. Nor are there any plans for dealing with future energy shortages other than "find more oil".

Increased demand on natural gas reserves are also expected to continue to force price escalation in the future. In North America, marketable natural gas reserves have peaked and are in decline, and new finds are generally small scale and short term.

Needless to say, people in Southern Ontario and beyond will have to participate in this high stakes drama every time they fill up the gas tank or buy almost any product. The Ontario economy, which imports virtually all of the petroleum and natural gas it consumes, will increasingly suffer in coming years.

Concerns about the negative environmental impacts of some energy sources, the need to reduce greenhouse gases dramatically, and general price and demand pressures will make conservation of energy an essential and principal tool for economic health and for keeping household energy bills in check.

A variety of regulatory and financial levers to promote energy conservation can be implemented by the provincial and federal governments, including

- Shifting taxation from income to energy consumption, with appropriate transitional supports to reduce hardship for the most vulnerable households;
- Enabling development charges and property taxes to move away from market value and towards favouring compact city-building and transit-friendly development;
- Requiring more efficient urbanization of land, well beyond existing density standards*;
- Subsidizing energy-saving retrofits in buildings;
- Actively promoting the use of cleaner alternative motor fuels and power sources;
- Mandating improved energy efficiencies in building codes;
- Motor vehicle registration fees based on kilometers driven (and fuel consumption);
- enabling and fostering efficiency measures for the movement of goods;
- Significantly expanding financial support for intra- and inter-municipal public transit services; and
- Ending expansions of highway systems.

At the municipal level, current urban planning horizons extend well beyond the 2010-2015 timeframe at which many analysts believe that 'peak oil' will occur. Growth plans for housing, commerce, transportation, public services and urban form overall will have impacts that last for a hundred years and longer. This accentuates the need to find ways to build cities and towns as energy-efficient as possible without delay. The inclusion of impact analyses of higher energy costs in updates of Official Plans can support prudent action.

Success in reducing the economic hardship and environmental damage caused by high levels of energy consumption and prices requires a wide range of measures by municipalities, such as:

- Through changes to official plans, increasing urban population and employment densities in both existing built-up areas and wherever greenfield development occurs, in ways that are attractive and functional. This means such things as:
    - Ensuring greater infill and intensification within already urbanized areas;
    - In built-up residential areas, encouraging accessory units such as basement apartments;
    - Requiring much higher floor space indices for all new construction, including requiring multi-storey construction, reduced building setbacks, the use of shared (public) parking spaces and reduced private parking minimums.
    - Giving priority to multi-unit or row house residential development, in support of changing demographics, land and energy conservation, more vibrant communities and efficient public services (Fewer walls and ceilings exposed to weather means less energy demand for heating and cooling. Space heating is the primary consumer of non-industrial use of natural gas);
    - Whenever new retail areas are planned or existing ones are to be renovated, requiring residential units (high-rise or 4 to 5 storeys) and/or office spaces to be constructed above shops;
    - Rehabilitating and restoring brownfield lands (derelict and/or contaminated industrial) to productive urban use;
    - Increasing densities for urban development on greenfield lands to *at least* 100 residents and jobs per gross hectare in a family-friendly manner.

- Because transportation is the primary petroleum end use (69% of demand, according to Statistics Canada), it is urgent that overall vehicle-kilometres are dramatically reduced, through implementing better and more frequent public transit services and promotion of other alternatives to driving, and by developing communities to be more self-contained. Most daily trips should be, over time, by means other than personal automobile.

- Replacing the separation of non-residential and residential uses that lengthens travel distances with an intimate mixing of as many urban activities as possible. For example, ground floors (and second floors as well) of existing high-rise residential buildings can be used for most non-industrial non-residential uses, such as shops and offices.

- Fast-tracking approval processes for progressive land development applications that are high density (100 or more residents and jobs per gross hectare) and energy-efficient.

- Where they control local public utilities, municipalities can initiate or participate in programs that foster efficiencies in power or water consumption, principally consumption-deterring price increases. Local initiatives can also include water demand reduction through rain-water harvesting for use in gardens, and encouraging brownwater use for toilets.

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***** See SUDA Information Release "Sustainable Urban Densities: A Brief Comparison Across the Toronto Region".

SUDA is a registered Canadian charitable organization whose mission it is to foster a healthy natural environment through education about sustainable city-building, by providing information in the Toronto region through outreach, research and analyses, networking and electronic communications. Your financial contributions in support of our work are welcome, and can be made through www.suda.ca.