

Planning for Energy Transitions

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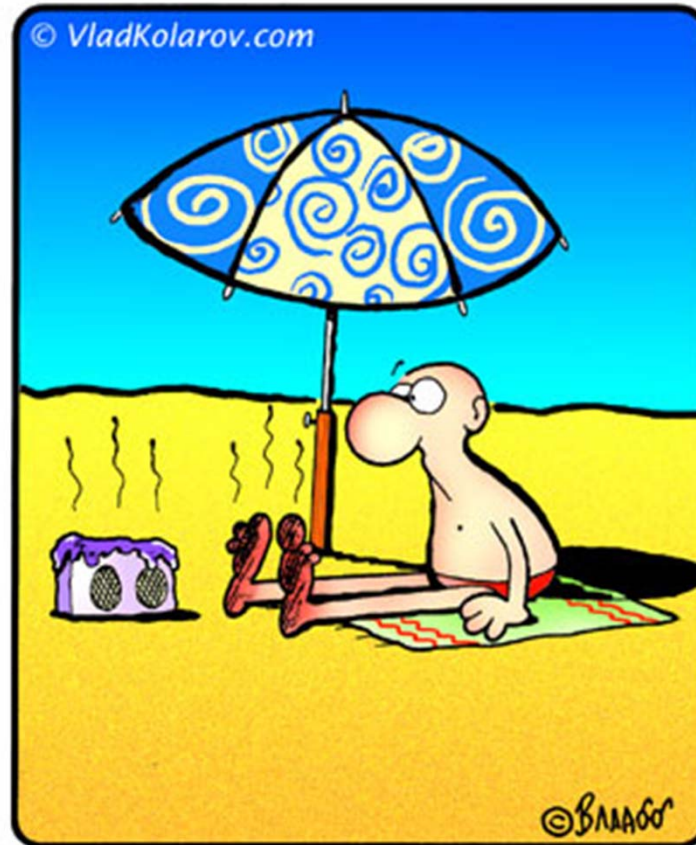
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The Green Wave

Climate Change, Energy Security, state and federal incentives, and the push for “green jobs” have created momentum in favor of kicking our “oil addiction”



"Jeez, this global warming is getting serious!..."



Is Energy Change Coming?

- Currently the world produces and uses 88 million barrels of oil a day, even with the huge recent increases in use in India and China
- If China and India had the same per person oil usage as the U.S. it would require 280 million barrels of oil a day.



Is Energy Change Coming?

- The United States possesses 2.6% of the world's oil reserves while it consumes 24% of the world's oil production.



Is Energy Change Coming?

- New York utilities are not investing in significant efforts to upgrade the grid. Our ability to handle increased energy needs is in doubt



Is Energy Change Coming?

- US pet food companies spent more on R&D last year than US utilities did.



Energy Efficiency

- Energy efficiency can reduce costs, but savings are often plowed back into other energy-consuming activities; true reductions in usage are rare.
- Neither LEED nor other programs guarantee energy efficiency



Energy Efficiency - EnergyStar?

The GAO study, “Covert Testing Shows the Energy Star Program Certification Process Is Vulnerable to Fraud and Abuse,” fictitious companies obtained EnergyStar status for some conventional devices like dehumidifiers and heat pump models that existed only on paper.

Also Approved: A Gasoline-Powered Alarm Clock



Strong Medicine Needed

- Changes in our society require strong public policies backed by powerful incentives to operate in a sustainable manner.



Strong Medicine Needed

- “The great flaw in the sustainable-business movement today is that few are willing to admit that achieving sustainability is difficult, and maybe impossible, without big changes in the way the world operates.”

- Auden Schendler, *Getting Green Done*



We are in Charge

- “U.S. consumers have direct or indirect control over 65% of the country's greenhouse-gas emissions, according to new statistics tallied by consultant McKinsey & Co. The figure for consumers in the rest of the world is just 43%. Americans, largely because of how they drive and how they build and use their homes and offices, lead some of the most energy-intensive lives in the world.” (*WSJ*, 10/2/2008)



For Municipalities, the Question is Settled

- Our government bodies are charged with providing the maximum level of affordable services at the lowest possible cost. Only sustainable communities, ones that acknowledge and realize the full cost of every action – immediate and long-term - will achieve this goal.



Start with the Comprehensive Plan

- Does your Comprehensive Plan spell out how the future will be powered?



Start with the Comprehensive Plan

- Consider an energy-only Plan Amendment, where your community debates the issues of wind, solar, gas, biomass, energy efficiency
- What kind of Community do you want and how do you want to get there?



Smart Growth

- Smart Growth promotes **Sustainable Development**: Development with the goal of preserving environmental quality, natural resources and livability for present and future generations.
- Smart Growth fights **Sprawl**: Sprawl is dispersed, auto-dependent development outside of compact urban and village centers



Smart Growth

Reality Check

- It is easier to get grants for roads than open space
- Communities compete by claiming to be the lowest barriers to development
- Most zoning still promotes separation of uses, even between residential types. Mixed uses are often prohibited
- Smart Growth is often any growth



Smart Growth

Strategies

- If you are not willing to say no to developers, you are wasting your time
- Incentive zoning to encourage balancing of benefits and impacts, promote infill
- Change zoning to promote mixed uses, flexible setbacks, site development standards that promote walkability and transportation efficiency



Municipal Empowerment

General Municipal Law § 360(2):

Notwithstanding any general or special law, any municipal corporation may construct, lease, purchase, own, acquire, use and/or operate any public utility service within or without its territorial limits, for the purpose of furnishing to itself or for compensation to its inhabitants, any service similar to that furnished by any public utility company specified in article four of the public service law. For such purpose, any municipal corporation may purchase gas or electrical energy from the state, or from any state agency, or other municipal corporation, or from any private or public corporation.



Municipal Empowerment

General Municipal Law § 360:

- establishing local utility service does not require you to buy out the local utility
- first step is a mandatory referendum
- method of operation of and the service rates, rentals and charges and the procedure for their collection shall be fixed by the legislative body of the municipal corporation, not the PSC
- surplus energy can be sold



Incentive Zoning

Incentive Zoning can take many forms, including the standard incentive zoning laws authorized in zoning enabling legislation. The key is a promise of greater density in return for a particular community development



Green Building Laws

- The U.S. Environmental Protection Agency defines green building as “the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from siting to design, construction, operation, maintenance, renovation and deconstruction.”



Green Building Laws

- The U.S. government reports that:
 - Residential (20.9%) and Commercial (18%) Buildings accounted for 38.9 percent of total U.S. energy consumption in 2006.
 - Buildings were responsible for 72.4% of total U.S. electricity usage in 2006.
 - Primary uses of energy in buildings are Space Heating 19.8% of total building energy consumption, Lighting 17.7%, Space Cooling 12.7%, and Water Heating 12.9%. Although significant press has focused on energy consumption by computers and electronics, combined these use 10.1%.
 - In 2008, buildings contributed 38.9% of the U.S.'s total carbon dioxide emissions, with 20.8% from the residential sector and 18% from the commercial sector.




Green Building Laws, Town of Greenburgh

- Requires 1 and 2 families, and multiple-family 3 stories or less
- To comply with Energy Star guidelines introduced by the EPA in 1992
- Developers Chose Techniques That Make Buildings 15% More Energy Efficient
 - insulation,
 - high performance windows,
 - efficient heating and cooling equipment, and
 - various energy efficiency products.



Incentive Zoning

Incentive Zoning has been upheld as a method to regulate utility scale wind farms in NY, *Finger Lakes Preservation Assoc. v. Town of Italy*



Sample “Green” Bonus Density

- Rural residential districts, major subdivisions:
 - *Ten-percent increase over the base lot count for adherence to New York State Energy Star guidelines, low-impact development guidelines, or U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) standards as they may be amended from time to time.”*



Creative Uses of Incentive Zoning - Port Jefferson Arts District

“to encourage improvements . . . within the Arts District, in order to promote an influx of art and cultural resources within the Village. The law contains incentives for land owners . . . whose property contains amenities to advance the above mentioned goals. The incentives include: changes in density requirements, changes in lot coverage, changes of up to 20% in minimum square foot floor area requirements, relief from on-site parking requirements, permitting studios and galleries which would provide art-related services and retail use, permitting second-story use of buildings used as studios and galleries as non-owner-occupied rental units, permitting use of land outside of buildings and structures for display and exhibit, and waiving, in whole or in part, compliance with on-site dumpster requirements.”



Incentives for Green Communities

- Open Space – Public or private
 - Most common type of amenity
 - NYC public plaza for floor space trades
 - Dedication of land to the municipality
 - Conservation Easement (combine with TDR)
 - Construction of trails or parks



Incentives for Green Communities

- Green Buildings

Chicago's Green Roof program waives fees, expedites review, other bonuses

Be careful of trading density or other physical improvements for uncertain benefits – LEED Certification



Green Roofs

- Benefits include improved air quality, storm water management, improved building efficiency, longer roof life, urban greenery
- Regulations general pertain to structural support, slope, waterproofing, drainage, growing medium, and vegetation types
- In Los Angeles County, 90% plant coverage must be reached within 2 years
- Municipalities with green roof regulations include NYC, Chicago, Toronto, and Philadelphia
- Grants/tax credits are offered in Cincinnati, Chicago, Portland (Or.), New York City and Philadelphia



Green Overlay Zones

- Overlay Districts are placed over a base district or multiple base districts. The base district regulations still apply with additional development or use restrictions imposed by the overlay district. Restrictions concerning building and site development can be imposed within an overlay district and uses which conflict with the goals of the overlay district can be eliminated. The intent and purpose of the overlay district must be clearly laid out in your zoning regulations.



Columbia CT, Watershed Protection Overlay Zones

“In CT in 2003, the Town of Columbia developed a Columbia Lake Watershed Protection Overlay Zone on a residential agricultural district because the lake is highly susceptible to increased enrichment from stormwater runoff. Within this zone, all new development must comply with strict regulations designed to protect the water quality of Columbia Lake by preventing nutrient enrichment and contamination. . . The overlay zones require best management practices (BMPs) to reduce the amount of phosphorus exported from a site. The amount of phosphorus generated can be reduced by increasing stormwater infiltration and by the detention of stormwater before it reaches the lake. Example BMPs include permeable pavements, bioretention structures and vegetated swales. To obtain a building permit within the overlay zone, a landowner must show that the total amount of phosphorus exported from a project site is less than the allocation defined in the Columbia Lake Watershed Management Plan or they are required to implement BMPs” *Green Valley Institute*



Mixed Use Overlay Zone, Brick, NJ

- Pedestrian oriented neighborhoods
- Services, shops, jobs and mass transit within walking distance of homes
- “Pedestrian Realm” – increased sidewalk space, frontage requirements, rear of building parking
- No construction of gas stations, drive-thrus and parking garages or lots not associated with a permitted use
- Roofs for rain gardens, green roof
- LEED integrated into design and construction of new buildings



Conclusion

Local communities have unique powers to set the energy agenda



Low Energy Overlay Zones

- Zero or low carbon homes
- Require renewable energy aspect
- Passive home standards
- EnergyStar Building Program compliance
- LEED certified does not necessarily mean energy efficient



Promoting Renewable Energy

- Adopt the DEC's Greenhouse Gas Emission's review policy
- [Guide for Assessing Energy Use and Greenhouse Gas Emissions in an Environmental Impact Statement](#)
- Technically only applies to DEC staff, but can be used by local agencies when energy use or GHG emissions are identified as significant in a positive declaration or, as a result of scoping



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