



Local Government Energy Initiatives Bring Regional and Global Impacts

NYSERDA - Energy Smart Communities (ESC)
 International Council of Local Environmental Initiatives (ICLEI)
 Central New York Regional Planning and Development Board

THE BIG PICTURE

It's All About ENVIRONMENTAL STEWARDSHIP

Sustainable practices save money, boost the local economy, improve air quality and public health and improve livability of the community; social equity




POLICY | HYDRO | BIOENERGY | GEOTHERMAL | WIND | SOLAR | HYDROGEN | EFFICIENCY


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Impacts on Global Warming


State and Local Government's Impact Global Warming and Air Quality

State and Local policies affect all the major sources of global warming pollution






Energy Codes, Energy Use, and Electrical Generation



Transportation and Planning



Solid Waste Management

Residential, Commercial and Industrial Buildings

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Getting Started

Develop A Baseline - Inventory

Set an Emission Reduction Target

- Must pass a **Local Ordinance/Legislation** to reduce your Energy & Greenhouse Gas Emissions

Adopt a Local Action Plan

- Urban Environmental Accords -UEA
- GreeningUSA - Twelve Traits of Sustainable Cmunities
- International Council for Local Environmental Initiatives - ICLEI

- **Implement** your Policies
- **Monitor and Evaluate** you Progress

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Develop an Action Plan - UEA

Urban Environmental Accords (7 Sectors, 21 Action Items)

- ENERGY
 - Renewable Energy - Energy Efficiency - Climate Change
- WASTE REDUCTION
 - Zero Waste - Manufacturer Responsibility - Consumer Responsibility
- URBAN DESIGN
 - Green Buildings - Urban Planning - Low Income Communities
- URBAN NATURE
 - Parks - Habitat restoration - Wildlife
- TRANSPORTATION
 - Public Transportation - Clean Vehicles - Reducing Congestion
- ENVIRONMENTAL HEALTH
 - Toxics Reduction - Clean Vehicles - Clean Air
- WATER
 - Water Access & Efficiency - Source Water Conservation - Waste Water Reduction

http://www.wed2005.org/pdfs/Accords_11x17.pdf?PHPSESSID=24e5776fb202be923c5ec403d353983

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GreeningUSA — Twelve Traits of Sustainable Communities

Sustainability Traits	Environmental Impacts	Economic Impacts	Social Impacts
1. Land Use Planning and Development that is integrated, balanced, and diversified	"Smart Growth" vs. Sprawl	Varied land use to support economic stability/growth	Access to all income levels and classes
2. Transportation & Parking with numerous options	Surface coverage, separation of areas, pollution	Shipping, employee transport, parking	Options available in all areas and to all people
3. Infrastructure Systems addressing long and short term	Use and protection of water	Systems for growth and commerce	Affordable access
4. Buildings and Housing are environmentally and energy responsible	Level of impact, relation to land use	Supporter and generator of economic activity	Affordability and access
5. Economic Development with diversified economic base	Appropriate growth	Balance of stability and growth	Employment, living wages, access
6. Energy Usage and Generation without reliance on fossil fuels	Air, water, and resource impacts	Balance of use vs. cost	Affordability and availability
7. Natural Resources Management integrated with other areas	Open space planning and protection	Tourism, recreation, Quality of life appeal	Access for all and availability
8. Waste Material Management is holistic and value based	Re-cycling and re-use to minimize impact	"Cradle to Cradle" economic model	Service available to all
9. Public Education of high quality including sustainability education	Sustainability Education	Long term workforce improvement	Sustainability as a social norm
10. Community Involvement by engaged, participating, citizens	Awareness and active work	Issue involvement	Social activism
11. Governmental Leadership by Executive, staff, and legislators	Environmental policies and legislation	Incentives to promote economic diversity	Social policies and legislation
12. Human Health and Safety based on clean, safe, healthy, communities	Air, water and resource quality	Worker productivity	Equitable health care and safety system

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Develop Your Baseline – Inventory Energy Usage



ICLEI - International Council for Local Environmental Initiatives

- Clean Air & Climate Protection Software - CACPS

ICLEI Members - represents 650 world wide local governments in 45 countries, representing nearly 300 million people worldwide.

165 local governments in the US which represents 20% of the population, 55 Million people; reduced eCO2 by 23 million tons annually resulting in a savings of: \$535,000,000.00

<http://www.iclei.org/>

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ICLEI Software

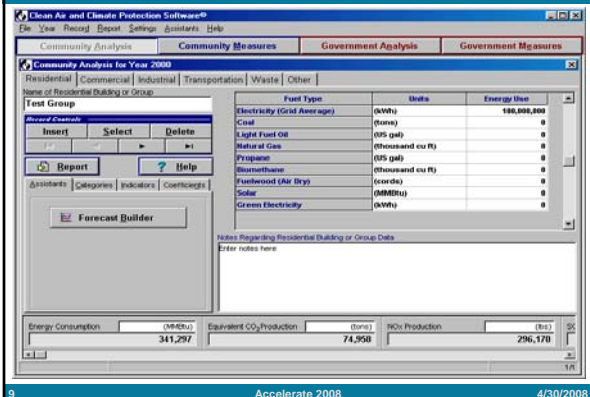


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Clean Air and Climate Protection Software



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What is Tracked and Quantified?

- Greenhouse Gases
 - Carbon Dioxide (CO₂)
 - Methane (CH₄)
 - Nitrous Oxide (N₂O)
- Criteria Air Pollutants
 - NO_x
 - SO_x
 - Volatile Organic Compounds (VOC)
 - Particulate Matter (PM10)


• **Reported in carbon dioxide equivalencies (eCO₂)**

"Indicators" standardize results for ease of comparisons
- per capita, per household, per unit of floor area, etc.

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Organization of the Software (Main Divisions)

The software takes a sector based approach to account for all activities taking place within the jurisdiction.



- **Community:** The emission and reduction from the jurisdiction as a whole.
- **Government:** The emissions and reductions associated with the government's own operations.
- **Analysis:** Creates an inventory of all emission sources.
- **Measures:** Allows you to quantify all existing or proposed emission reduction activities.

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Type of Measures

- RCI Buildings, Streetlights, Water / Sewage Sectors:
 - Energy efficiency measures
 - Change in energy source or fuel type
- Transportation, Vehicle Fleet, & Employee Commute Sectors:
 - Change in vehicle type, mode, occupancy, fuel used, and miles traveled
- Waste Sector
 - Waste reduction, recycling and composting measures
 - Changes in disposal technologies

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EXAMPLE

New York State

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NYS CRAPE – 1999 – SUMMARY

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**New York
Community Criteria Air Pollutants Emissions in 1999
Summary Report**

	NOx (tons)	SOx (tons)	CO (tons)	VOC (tons)	PM10 (tons)
Residential	96,549	150,851	396,872	64,462	65,715
Commercial	105,484	280,897	90,438	14,462	40,897
Industrial	118,821	252,832	419,266	76,310	65,670
Transportation	312,073	16,460	2,167,252	234,073	9,975
Total	632,927	701,039	3,032,828	389,326	182,257

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NYS CRAPE – 1999 - SOURCE

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**New York
Community Criteria Air Pollutants Emissions in 1999
Report by Source**

	NOx (tons)	SOx (tons)	CO (tons)	VOC (tons)	PM10 (tons)
CNG	91	2	5,543	111	12
Coal	22,510	57,818	4,776	301	3,447
Diesel	92,458	5,864	49,354	9,912	5,408
Electricity	108,464	432,438	66,519	7,587	62,959
Fuelwood (Air Dry)	8,642	1,210	705,510	130,045	92,039
Gasoline	219,487	10,591	2,105,170	223,305	4,539
Heavy Fuel Oil	14,796	70,245	7,791	1,252	4,236
Light Fuel Oil	55,093	98,872	51,511	10,287	6,024
LPG	117	2	7,195	145	16
Natural Gas	109,152	23,990	20,951	5,712	3,512
Propane	2,195	0	320	72	65
Total	632,927	701,039	3,032,828	389,326	182,257

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RPS of 25% by 2012

New York State

- Estimated Impact of meeting RPS of 25% by 2012
 - eCO₂ reductions: 6.8 million tons
 - NO_x reductions: 7,493 tons
 - SO₂ reductions: 23,055 tons
 - CO reductions: 9,924 tons
 - VOC reductions: 1,095 tons
 - PM₁₀ reductions: 7,131 tons

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City of Syracuse

- **Commodity Procurement**
 - \$2,130,000.00 in Avoided Costs - leverage with other entities and monitor rates (02-07)
- **Street Lighting**
 - 16,101 Luminaries - MV to HPS
 - Energy Savings - \$75,751.00 annually
 - 2,525,025 Kwh's saved, 996 tons of eCO₂
- **Traffic Signals**
 - 354 locations - 10,050 incandescent lights to LED's
 - Reduced energy by 90%, 3,351,583 Kwh's, 1,324 tons of eCO₂ (NO_x-3,014lbs, SO_x9,203lbs, VOC-419, PM10-2,781lbs)
 - \$537,435.00 NYSERDA Rebate

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City of Syracuse

- **City Hall Commons** - in progress
 - 592,794 Kwh's saved
 - NYSERDA Rebate \$137,203.00
- **Parking Garages**
 - Retrofitted lighting in 4 City Parking Garages
 - 256,664 Kwh's saved, 106 tons of eCO₂
 - NYSERDA Rebate \$25,000.00
- **City Hall** - energy retrofit
 - 548,121 Kwh's saved
 - NYSERDA Rebate \$108,975.00
 - Designated as an ALL GREEN Building - uses 40% hydro, 40% biomass, 20% wind
- **Street Lighting Infrastructure** - RFP
- **Energy Generation** - Biomass
- **Environmental Legislation** - LEED's, Energy Star, Cleaning and maintenance Products, etc.

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City of Syracuse

- **NYSERDA Rebates**

- \$959,754.00 - received to date

- **Consultant Contracts** - no upfront costs

- Commodity Savings \$2,130,000.00

- Street Lighting - \$117,000.00

- General Utility Bills - \$54,322.00

- Telephone & Landline- \$94,080 to date

- Street Lighting Audit (2) - in progress

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Monitor, Evaluate and Report Results

- **Monitor and Evaluate Your Initiatives**



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New York State Energy Research and Development Authority

(NYSERDA)

NYSERDA offers financial and technical assistance to the State's businesses, industries, municipalities, and residents to address New York's energy and environmental needs. Incentives are available through a number of programs for various projects and initiatives such as new construction, commercial/industrial projects, energy efficiency improvements, wind and solar systems, energy audits, and much more.

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NYSERDA – Incentives

Agricultural
 Commercial/Industrial
 Hospital/Institutional
 Municipal
 Residential
 Residential Family 5+ Units
 Residential Single-Family to Four-Family

<http://www.nyserra.org/incentives.asp>

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NYSERDA –Sector Specific Approach

RFP – 1036 (Phase I)
 Water & Waste Water
 Hospitality
 Industrial

RFP – 1076 (Phase II)
 Colleges & Universities
 Local Governments
 Health Care Facilities

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The Beginning

-THANK YOU-

Paul Thompson

CNY Regional Planning & Development Board
 Energy Programs Coordinator

Energy \$mart Communities (ESC) Coordinator – NYSERDA

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NYSERDA Operations

- Commercial and Industrial 
- Residential
- Research and Development
- Energy Analysis 

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Installation Assistance


- Enhanced Commercial/Industrial Performance Program
- Peak Load Reduction Program
- New Construction Program
- Loan Fund

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FlexTech & Technical Assistance

Objective: *Provide cost-shared energy studies*

- Feasibility Studies
- Energy Master Plans
- Energy Procurement
- Retrocommissioning
- CHP/Renewables
- Load Curtailment
- Energy Advisor



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Commercial & Industrial Programs

All Buildings

- Loan Fund

New Buildings

- New Construction/Green Buildings

Existing Buildings

- FlexTech/Technical Assistance
- Enhanced Commercial/Industrial Performance Program
- Peak Load Management Program



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Further NYSERDA Assistance

www.nyserda.org

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