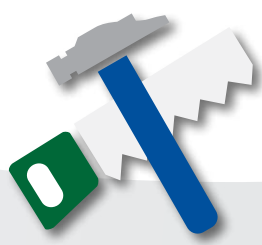
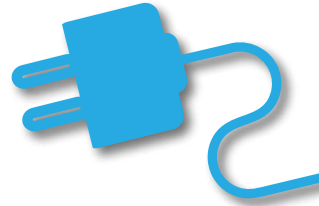
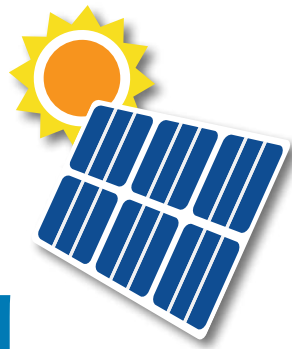


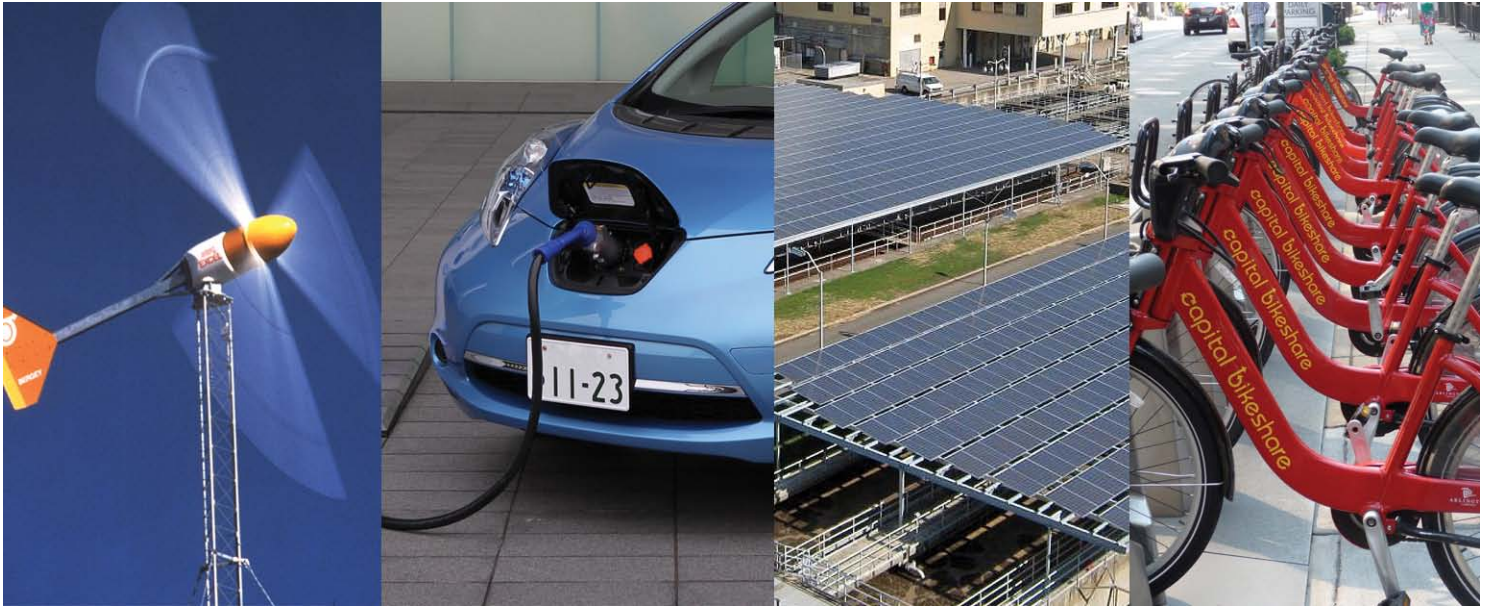
2012 Emerging Sustainability Strategies in America's Counties



For more information, please visit www.naco.org/greencounties or contact Jared Lang, Program Manager, Green Government Initiative, at jlang@naco.org or (202) 942-4224.

About the National Association of Counties

For more than 75 years, the National Association of Counties (NACo) has been the only national organization that represents county governments before the Administration and Congress in the United States. Founded in 1935, NACo provides essential services to the nation's 3,068 counties. NACo advances issues with a unified voice before the federal government, improves the public's understanding of county government, assists counties in finding and sharing innovative solutions through education and research, and provides value-added services to save counties and taxpayers money.



As one of the premier knowledge-providers for county leaders, NACo's Green Government Initiative maintains a quick-reference resource of the emerging sustainability strategies being implemented in America's counties. With the economic challenges county governments are facing in 2012, sustainability efforts are emerging that improve the environment, but at the same time, increase efficiency and economic development efforts.

In particular, NACo's Green Government Advisory Board identified several key trends influencing the emergence of new sustainability strategies.

- With today's budget challenges, counties almost always pursue sustainability strategies that also result in efficiency and cost savings.
- Sustainability strategies are emerging that have clear paybacks and limited risks.
- "Expensive" and "Complex" technologies are not necessarily needed to advance sustainability in America's Counties. Simple strategies with clear objectives succeed more often.
- "Sustainability" and "Innovation" are defined differently across counties. Depending on population size, resources, and skill sets, definitions and solutions can be different. Strategies need to be flexible and work across different communities.
- Strategies that harness existing operational and community strengths most often succeed.

This document is developed with the guidance of NACo's Green Government Advisory Board, made up of 40+ county and corporate leaders in the sustainability field. NACo and the Green Government Board understand that this list does not account for every emerging sustainability strategy in America's counties in 2012. Yet, it serves as a good place to start.

2012 Emerging Sustainability Strategies and Technologies

1. Electric Vehicle Infrastructure Development
2. Community-wide Energy Management
3. Community-scale (Distributed) Wind Power Generation
4. Purchase of Bio-based Products
5. Conversion Technologies
6. Environmental Media Buying
7. Bicycle Sharing Programs
8. Power Purchase Agreements
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10. Energy and Water Conservation in County Corrections Facilities
11. Energy Efficiency and Renewable Energy in County Water Facilities
12. Implementation of the International Green Construction Code (IgCC)
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Electric Vehicle Infrastructure Development

Strategy: Building the infrastructure systems necessary to operate and maintain electric vehicles in county operations and community-wide. Focus on economic competitiveness, business attraction, and air quality.

Relevance: In many counties belief is growing that the future will include electric vehicles that run off of renewable energy. This vision requires a complex new infrastructure to become reality.

County Action: County governments are beginning to take on the task of building the new infrastructure for electric vehicles. In particular, they are installing electric vehicle charging stations, equipping their own fleets with electric vehicles, and some are beginning to connect charging stations to renewable energy sources.



Example

Sonoma County, CA installed seven new electric vehicle (EV) charging stations. Six of the stations will be used to charge county fleet vehicles at night and will be available for public use during daytime hours. The stations represent a first step in the county's long term goal of establishing a viable public infrastructure for EV charging.

To review Sonoma County's Electric Vehicle Charging Station Program and Installation Guidelines, visit www.naco.org/greendatabase.

In 2011, NACo hosted a webinar about County Electric Vehicle programs. Download the archived presentation at www.naco.org/energy.

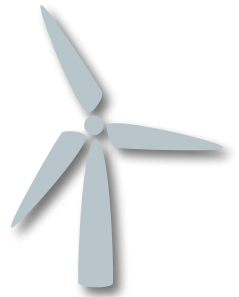
many different characteristics. Some noteworthy examples include long-term plans and phases. They focus on everything from energy efficient upgrades in county facilities, renewable energy generation, business challenges, to energy auditing services, and efficiency incentives.

Example

Loudoun County, VA has taken the lead by developing a comprehensive County Energy Strategy (CES) that supports the County's economic competitiveness, attracts high-quality employment and investments, and responds to the impact that county energy use has on the environment. To learn more visit www.loudoun.gov/Default.aspx?tabid=2363.

Community-scale (Distributed) Wind Power Generation

Strategy: Community-scale, or distributed, wind power is unique in that it utilizes wind energy to directly power facilities on properties where turbines are located. The power is NOT transported elsewhere through utility-scale systems.



Relevance: Utility-scale, "Big Wind," is becoming common across much of the American West and Mid-west. And many people are adding solar installations to their properties to power own facility. Yet, until now, wind power has not been commonly used to power on-site facilities. As wind power technology improves and costs fall, and counties create policies to support small-scale wind turbine installation, on-site wind power is becoming more common.

County Action: Counties are installing local wind turbines for their operations. In addition, counties are adopting favorable wind energy policies and addressing permitting and code-compliance to encourage distributed wind development by community residents and businesses.

Example

Several counties in Southwestern Minnesota have joined together to develop and adopt the Minnesota Model Wind Ordinance—a model zoning ordinance for small wind systems. The ordinance provides clear guidance for residents on permitting, siting, setbacks, safety, and design. To learn more, visit www.windustry.org/minnesota-model-wind-ordinance.

Community-wide Energy Management

Strategy: Addressing energy efficiency and renewable energy generation across an entire county—engaging residents and businesses. Focus on economic competitiveness, business attraction, and cost savings.

Relevance: Reducing energy costs and overall usage, in turn, reduces cost of living for residents and operating costs for local businesses. For counties, community energy management is proving to be one of the most effective methods for finding political common ground and moving forward on sustainability goals.

County Action: County community-wide energy management strategies can take on



Utilizing Bio-based Products



Strategy: Bio-based products are consumer goods produced using organic material, such as corn, soy, or bamboo. They are biodegradable, non-toxic, and typically much better for the environment than traditional products used in America's counties.

Relevance: In the past bio-based products have been criticized for being less effective and more expensive than traditional products. Today, county purchasers are finding that many of the newest generation bio-based products are better performing, cheaper, and more environmentally-friendly than traditional products.

County Action: Many counties are using typical purchasing channels to find bio-based products and are developing policies that prioritize their use over traditional products. Some county boards have even implemented policies that require the use of bio-based products when feasible.

Example

Charlotte/Mecklenburg County, NC partnered with Wake Forest and UNC-Charlotte to establish an intern study program to research various bio-based products and test their performance. The county completed rigorous analysis of potential bio-based products, including office supplies, paper products, carpet, oils/lubricants, playground equipment, and janitorial cleaning supplies. The interns compared typical printer cartridges with re-manufactured, soy ink cartridges, and they found that the soy ink cartridges serve the county's needs best. For more information about this program, visit www.naco.org/greenpurchasing.

Conversion Technologies

Strategy: Conversion technologies convert solid waste to produce electricity, alternative fuels, chemicals and other products that meet quality standards for use in the marketplace, with a minimum amount of residuals remaining after processing. The conversion is done using non-combustion thermal means, chemical means, or biological means.

Relevance: As landfill space disappears and environmental concerns rise, waste diversion and value creation from the waste stream are rising in prominence.

County Action: Counties are partnering with private companies that have the expertise in developing and operating modern waste conversion technologies, establishing plants within their communities.



Example

Santa Barbara County, California and the City of Santa Barbara have joined together to evaluate the feasibility of various waste conversion technologies that provide alternatives to landfilling of solid waste. Specific technologies include: anaerobic digestion, hydrolysis, waste-to-energy, and thermal processing. To learn more, visit www.conversiontechnologystudy.com.

Environmental Media Buying

Strategy: Advertisers work with third-party companies to dedicate a specific portion of their advertising budgets to local environmental projects. Counties can serve as the conduits for the local environmental projects.

Relevance: This is a brand new model developed by EcoMedia CBS to allocate more funding toward environmental programs and projects. Counties are beginning to sign agreements with EcoMedia CBS and get projects started in their communities.

County Action: EcoMedia CBS is partnering with counties and recruiting companies interested in allocating more funding toward environmental programs.

Example

Miami-Dade County, FL has received almost \$500,000 in cash and in-kind donations from EcoMedia to perform projects—including storm-water filters, tree plantings, a solar installation at the county courthouse, and plans for a new green think tank. To learn more about this program, visit www.miamigov.com/cms/comm/1724_4948.asp

To learn more about EcoMedia CBS, visit www.naco.org/greenecmedia.

Bicycle Sharing Programs

Strategy: Bicycle sharing programs make bicycles available for shared use by members of the public. By providing a number of bikes at different stations throughout a community, communities make bikes available to residents and visitors.

Reason Included: Bicycle sharing programs can reduce congestion by providing alternatives to motor vehicles for commuting or short-haul trips. Shared bicycles provide low-cost transportation choices for residents and employees, while promoting public health by encouraging active transportation options and reducing greenhouse gas emissions. Further, bicycle sharing programs support existing public transit by providing "last mile" connections between transit stations and destinations.



County Action: Counties are establishing bike-sharing programs with stations located at strategic commercial, transportation, and business destinations in their communities.

Example

In September 2010, Washington D.C. Mayor Adrian Fenty and Arlington County Board Chair Jay Fissette kicked off Capitol Bikeshare—a joint effort between Washington, D.C. and Arlington County, VA. Now the largest bike share program in the U.S., Arlington has since expanded to 18 stations, adding 4 stations in the Rosslyn area. Soon the program will add 26 stations in the Rosslyn-Ballston metro corridor. The number of people cycling in Arlington has visibly increased in the last two years. Capital Bikeshare now has over 18,000 members and has recorded over 1 million total rides. Montgomery County and Alexandria plan to join the system soon. To learn more, visit www.capitalbikeshare.com.

Smart and Connected County Facilities

Strategy: Installing systems to manage and monitor the effectiveness of all county facilities and all their systems from one portal—including HVAC systems, lighting, security, data, voice, and intercom systems into a single network.

Reason Included: The strategy makes more efficient use of operational resources and reduces costs. By making building systems “smarter” and developing better strategies for management, counties are centralizing their operations and improving building monitoring activities across a larger geographic area.

County Action: Counties are working with companies like Cisco, Johnson Controls, NORESO, and Siemens to make their county facilities “smarter” and connect them to central operating systems.

Example

Collier County, Florida worked with Johnson Controls to install its Metasys® building management system to monitor and control HVAC systems in 18 buildings on the main government campus and other major facilities throughout the county. The system controls over 6,200 points, including HVAC and building controls, lighting, security, and fire alarm systems.

Power Purchase Agreements (PPAs)

Strategy: Power Purchase Agreements (PPAs) are electricity contracts between two parties, one who generates electricity for the purpose of sale (the seller) and the purchaser of the electricity, in this case, a county (the buyer). Presently, PPAs are most often used for the production and purchase of solar power.



Reason Included: As counties are looking for ways to balance budgets, many do not have the upfront capital to invest in renewable energy generation nor the funds to maintain installations. As a result, PPAs have emerged to enable counties to receive many of the benefits of solar power generation, without the cost of owning and operating it themselves.

County Action: Counties are partnering with solar energy providers to generate solar power for their county operations.

Example

In late 2011, Constellation Energy completed the development of a 750-kilowatt on-site solar installation at Anne Arundel County’s Combined Support Services Complex in Millersville, Maryland. Through the PPA, Constellation Energy financed, owns, and operates the solar installation. In return, the county purchases the electricity produced by the systems at a reduced cost from Constellation Energy over a 20-year period. To learn more about this program, visit www.naco.org/greenconstellation.

Energy and Water Conservation in County Correctional Facilities

Strategy: Targeting energy and water conservation strategies at county-owned correctional facilities.

Reason Included: County jails represent many counties’ largest expense. As a result, they present major opportunities for resource and cost savings, and counties are paying special attention.



County Action: Counties are implementing systems for plumbing and/or energy use that conserve energy and water, limit inmates’ ability to tamper with conservation measures, and reduce operating costs.

Example

Allegheny County, PA is implementing measures to substantially reduce high water consumption at the county jail by upgrading to new low-flow plumbing fixtures and installing plumbing controls. Allegheny will install an I-CON plumbing control system, which will not only reduce water use from the current 3.5 gallons/flush to the industry standard of 1.6 gpf, but will also allow only a pre-set number of flushes per hours to “lock out” excessive, mischief-driven behavior from inmates that leads to clogged pipes, flooded cells, etc.

For more information about this program, visit www.naco.org/greendatabase.

Energy Efficiency and Renewable Energy in County Water Facilities

Strategy: Targeting energy efficiency and renewable energy efforts at county water and wastewater facilities.



Reason Included: At an average energy cost of \$0.075 per kWh, the cost for providing safe drinking water and effective wastewater treatment is approximately \$7.5 billion per year.ⁱ Counties are the form of local government most often responsible for managing water supplies. As such, counties are beginning to address management

costs at wastewater facilities with energy conservation and renewable generation measures.

County Action: Counties are developing strategies to specifically target energy efficiency efforts at their water and wastewater facilities.

Example

Kent County, MD is establishing their county wastewater facility as energy independent. In 2006, the county began working with Constellation Energy to obtain a state grant to study the feasibility of the wastewater facility to function as a “renewable energy park.” The county determined that the facility would become energy independent and began researching wind, solar, biomass, and hydropower options.

For more information on this program, visit www.naco.org/greendatabase.

Implementation of the International Green Construction Code (IgCC)

Strategy: The International Green Construction Code (IgCC) serves as an overlay to existing state and municipal codes and establishes baseline sustainable design requirements for new and existing buildings.



Reason Included: The IgCC is the first code of its kind. As counties across the country seek to strengthen their commitment to build green, the IgCC is providing an international standard they can use to establish green building guidelines.

County Action: Counties are considering full or partial adoption of the IgCC to address codes issues, such as building material use,

waste management, and renewable energy generation. Adoption is a long process that involves complex political issues and financial ramifications. Many counties are being cautious about how to proceed here.

Example

At the present time, there are several counties considering the adoption of the IGCC. Kane County, IL has included several principles derived from the IgCC into their transportation planning program.

For more information on the IGCC, visit www.iccsafe.org/cs/igcc.

Commercial Property Assessed Clean Energy (PACE) Programs

Strategy: Property-Assessed Clean Energy (PACE) programs enable local governments to loan money to residents and businesses for energy upgrades and receive loan payment through property tax bills. The initial PACE programs were targeted at residential homeowners and were structured so that they had first priority in payback over first mortgages. Commercial PACE is the next generation of PACE programs, focused on the commercial sector—where banks okay the loan structure before loans take place.

Reason Included: The Commercial PACE model is reducing capital costs for energy upgrades, making more capital available, and giving local government a financial role in improving community-wide sustainability. Since the PACE bond is attached to the property, when owners want to move or sell, the loan stays with the property.

County Action: Counties are using Commercial PACE programs to drive community energy upgrades, pump new capital into their communities, and create jobs.

Example

Placer County, CA began to focus on providing PACE financing to commercial building owners in 2010. The program provides funding for both energy efficiency and renewable energy improvements. Both lender acknowledgment and a 1:10 lien-to-value ratio are required to participate in the program. Two commercial projects have been funded and the county is processing twelve other applications. Currently, \$33 million is committed for financing through the County Treasury with an additional \$22 million available. At a future date, the county plans to sell the PACE bonds purchased and held in the County Treasury to replenish program funds for ongoing financing.

For more information on Commercial PACE, visit www.pacenow.org.

ⁱ <http://water.epa.gov/scitech/wastetech/upload/Evaluation-of-Energy-Conservation-Measures-for-Wastewater-Treatment-Facilities.pdf>

Going Green through Information Technology Improvements

Strategy: Green Information Technology, or Green IT, is the practice of utilizing IT and IT hardware to reduce negative impacts on the environment. Essentially, IT is utilized to eliminate waste and reduce negative impacts associated with less efficient processes. In addition, characteristics of IT hardware are considered in purchasing and waste disposal. Specific strategies include cloud-computing, server virtualization, and the purchase of certified energy efficiency hardware.

Reason Included: Green IT is helping counties reduce the use of hazardous materials, maximize energy efficiency, promote recycling, and save money in the process.

County Action: Green IT strategies have been gaining serious attention as counties search for opportunities to reduce operating costs and become more efficient.

Example

In 2010, Fairfax County, VA undertook a county-wide server consolidation and virtualization project—replacing 896 physical servers with 14 enterprise systems. This strategy is saving the county over \$6 million in hardware costs, reduce electricity consumption by over 5.6 million kilowatt hours annually, and reduce greenhouse gas emissions by approximately 3.725 metric tons of CO2 annually. For more information, visit www.fairfaxcounty.gov/recovery/energy-block-grant.pdf.

Building Energy Performance Disclosure

Strategy: Requiring county government and residential and commercial building owners to disclose publicly the energy performance of their buildings.

Reason Included: Making energy performance data public raises awareness about energy use and costs, provides investors more information to make decisions, and in general encourages energy upgrades.

County Action: Several counties are considering or in the process of enacting policies that require their county operations to disclose energy use. Some counties are even considering disclosure rules for local home and commercial building owners.

Example

Montgomery County, Md., home of the northwest DC suburbs Bethesda, Rockville and Silver Spring, requires the disclosure of residential utility bills to prospective homebuyers prior to the closing of a transaction. Councilmember Roger Berliner was the chief sponsor of the bill, which was enacted along with six other energy and environmental bills by the Montgomery County Council on Earth Day 2008. For more information, visit www.montgomerycountymd.gov.

Community Choice Aggregation

Strategy: Community Choice Aggregation or CCA is a system which allows cities and counties to aggregate the buying power of individual customers within a defined jurisdiction in order to secure alternative energy supply contracts. Nearly one million Americans receive service from CCAs.

Relevance: Currently, the states of Massachusetts, Ohio, California, New Jersey and Rhode Island have adopted CCAs into law. And more are looking into CCAs to give their local governments choice in providing renewable energy to their communities.

County Action: Several counties in the states with enabling legislation are in the process of analyzing the appropriateness of CCAs for their needs.

Example

In March 2011 the Sonoma County Water Agency began investigating Community Choice Aggregation (CCA). They commissioned a feasibility study and are continuing to further define the goals, costs, and elements of a Sonoma County Community Choice Aggregation program. By mid-April 2012, the Water Agency will report back to the Board of Directors with details of their continued investigation into this opportunity. For more information visit www.scwa.ca.gov/cca.

Plastic Bag Regulations and Fees

Strategy: Require local retail stores to place fees or ban plastic bags with the goal of discouraging their use and ultimately limiting the number of bags found in local rivers and streams.

Relevance: In a 2009 study the Washington Area Council of Governments found that Plastic bags were the most frequent pollutant in local streams, where they tend to get snagged on vegetation and other obstructions. Several local governments have found that placing fees or bans on plastic bags significantly reduces their contribution to local pollution.

County Action: Several counties are enacting, or in the process of enacting, laws that place 5 cent fees on plastic bags or ban their use all together.

Example

Montgomery County Law 8-11, the carryout bag law, went into effect on January 1, 2012 and requires that all retail establishments that sell goods and provide their customers a carryout bag (either paper or plastic) to carry their purchases out of the store charge 5-cents per bag. Customers will not be charged if they use their own bags to carry purchases out of stores. To learn more visit www.montgomerycountymd.gov.

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