



Building a Winning Green Building Strategy

Successful Policies for Government, Industry and the Environment

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Governments at all levels are focused on finding ways to effectively tackle multi-faceted challenges faced by communities, including climate change, increasing energy demand, and deteriorating infrastructure, as well as increasing water consumption and waste generation. Buildings -- estimated to account for 40% of all energy consumed and 25% of all GHG emissions -- represent a significant opportunity for addressing these issues.

Green building policies offer a range of instruments, from incentive programs through to regulation, aimed at improving the performance of buildings. Effective green building policies can be successful at addressing these challenges, while also stimulating the economy, creating jobs and enhancing the livability of our communities.

This white paper presents select findings, including examples of policy successes and lessons learned, from a review of more than 200 green building related policies from across Canada, Mexico and the United States.

Changing trends in green building policy

Policies focused on the environmental performance of buildings are relatively new to North America. Since the 1990s, there have been many developments as we learn what works and what doesn't. Recent years have seen significant changes in green building policy design trends:

- Moving away from prescriptive requirements to performance-based outcomes.

- Moving away from using third-party green building rating systems as a surrogate for green building regulation.
- Articulating sustainable design approaches at the community to block scale through official development plans, guidelines and zoning which facilitate increased sustainability performance at the building scale.
- Tailoring green building requirements to address community priorities.
- Better integration into regulatory review processes.
- Demonstrating a clear business case to support policy implementation.
- Bundling policies yielding greater net impacts than individual policies acting on their own.
- Establishing mandatory requirements supported by a range of incentives.

Considerations in developing a green building strategy

Assessing the effectiveness of a policy requires having a clear picture of the desired outcomes. Some communities may be seeking to address climate change, while others may be more focused on economic revitalization and see green building practices as a means of achieving this. The bottom line is that "success" depends on a community's specific objectives. Local governments need to set clear objectives and targets and avoid adopting strategies from other communities that may not be appropriate. One size does not fit all.

Our review of green building policies from across North America identified a number of considerations in the planning, design, implementation, management and review of green building strategies that are strong predictors of success.



Plan

- Ensure political will exists to support the policy.
- Consider program management needs.
- Secure adequate funding to implement the policy effectively.
- Have a clear understanding of your target market.
- Conduct research and engage stakeholders early in the process.
- Leverage benefits from existing government and third-party programs.

Design

- Make change incremental.
- Make incentives tangible and significant.
- Make the application process as simple as possible with minimal ‘transactions’ through an integrated regulatory review process.
- Establish SMART (i.e., specific, measurable, achievable, realistic and time based) performance measures that are achievable and easily validated.
- Reinforce sustainability objectives at all scales from bioregion, down to community, block and building scale.
- Make communications/marketing easy to understand, access and implement.

Implement

- Ensure adequate staff resourcing.
- Work with private sector groups (from supply chains, real estate associations and developers) to help in market transformation.

Manage

- Track performance against performance measures.
- Provide adequate resourcing and monitoring of the policy.

Review

- Ensure policy remains relevant and continues to intensify green building practices.

Winning Policies

Our review of green building policies from across North America confirmed the success of a number of key policy initiatives as part of a successful green building strategy. The types of policies and examples provided here are not intended to be exhaustive, but merely illustrative of leading green policy initiatives.

Benchmarking

With the introduction of [Energy Star Portfolio Manager](#) to Canada in July 2013, along with other tracking software, such as [SoFi](#), Canadian jurisdictions are looking at mandatory energy benchmarking for buildings, already required by nine cities and two American states over the past several years. Buildings of a prescribed size are required to report energy consumption data annually. Benchmarking is a critical prerequisite to understanding the current performance of buildings and supporting their improvement. Indeed, 35,000 buildings using the U.S. EPA’s ENERGY STAR Portfolio Manager between 2008 and 2011 saved an average of 7% in energy.¹ Findings guide the development of additional programs and policies to address performance deficiencies.

¹ EPA, Energy Star Portfolio Manager Data Trends (October 2012).

NYC's first [public energy benchmarking report](#), based on 2010 data, was released in August 2012. 12,600 buildings reported in the first year (2010) representing 75% compliance. Findings provided unprecedented ability to pinpoint required areas to improve performance, as well as identified various recommendations for the collecting and reporting of energy data by utilities and property owners.²

Auditing

Building auditing is the corollary to benchmarking that identifies aspects of a building that are under-performing. A number of jurisdictions, including Austin, TX and New York City, NY recently mandated periodic building audits every 5 or 10 years. This policy is also a strong generator of green jobs for energy auditors and commissioning agents.

Recommissioning (RCx)

Recommissioning (RCx) is the recalibration of existing building systems to ensure their optimal performance. Studies have repeatedly found average energy cost savings from between 15%-30% with an average payback period of less than one year.³ RCx is an important complement to benchmarking and auditing, and local governments are beginning to incorporate this requirement into their green building policy toolkits. The cost-savings to building owners and managers along with the job creation potential makes this an attractive policy option.

Commercial Property Assessed Clean Energy (PACE) Programs

Property Assessed Clean Energy (PACE) programs are one of the most innovative and successful green building policy instruments introduced to date. The original PACE model provides property owners with a loan through a financial institution, underwritten by a government bond that is paid back over time through

a special assessment on the business' property taxes, at a rate aligned with savings achieved from energy efficiency improvements.

[A review of US PACE programs](#) in 2011 found 71 projects had been approved and financed by the then four active commercial PACE programs, representing about \$9.7 million in energy efficiency and renewable energy project investments.⁴ Established in September 2012, CaliforniaFirst, the largest PACE program in North America, has the participation of 81 of 88 municipalities in the state and has received 31 applications since its establishment in September 2012. The first application has just been finalized.

Los Angeles County's Commercial "Open Market" PACE program is an example of a new breed of PACE programs. Commercial PACE (C-PACE) offers property owners the ability to select the financial institution and contractors of their choice, including the institution that holds the first mortgage on the property. This allows property owners to negotiate financing with an investor of their choice. In a high vacancy environment like Los Angeles County, it provides property owners with the ability to potentially attract new tenants using operational savings.

Tax-Based Incentive Programs

There are many tax-based incentive programs operating in North America. One of the most unique is Mexico City's Programa de Certificación de Edificaciones Sustentables (PCES), a pilot voluntary three-tiered certification program supported by various economic incentives established under Mexico's Green Plan. It aims to promote and encourage the reduction of emissions and efficient use of natural resources in the design and operation of Mexico's residential and commercial buildings.⁵

² PlanNYC New York City Local Law 85 Benchmarking Report. August 2012. Available at http://www.nyc.gov/html/gbee/downloads/pdf/nyc_ll84_benchmarking_report_2012.pdf.

³ See e.g., Mills et al., "The Cost-Effectiveness of Commissioning New and Existing Buildings: Lessons from 224 Buildings", *National Conference on Building Commissioning* (May 4-6, 2005).

⁴ Berkeley Lab, *Policy Brief: Property Assessed Clean Energy (PACE) Financing: Update on Commercial Programs* (March 23, 2011) available at <http://emp.lbl.gov/sites/all/files/POLICY%20BRIEF%20pace%20financing.pdf>

⁵ Also worthy of note is the [US Energy Efficient Commercial Building Tax Deduction](#).

Certification under the regime is supported by a number of financial incentives. Buildings certified through the program are eligible to receive reductions of 30% on local property taxes or 20%-40% on payroll taxes.

Since its initiation in 2009, 44 buildings have been registered and 8 certified. Certified projects report a 1-2% increase in capital costs for certified buildings, although they also report reduced operational costs. In addition, there are no associated registration fees for the program, and consultant fees are approximately half of those for LEED.

Dedicated Financing Authorities

The [Connecticut Energy Finance Investment Authority \(CEFIA\)](#) is the first dedicated finance authority in North America to support the installation of market-ready clean energy technologies. Program funding comes from a variety of sources including a surcharge on residential and commercial electric bills, Regional Greenhouse Gas Initiative auction allowance proceeds, federal funds and grants, and private capital in the form of contracts entered into with investors and other sources.

CEFIA's achievements in just two years are significant⁶:

- Attracting \$4.7 million through its Clean Energy Communities program to support 20% energy savings by 2018 amongst 103 participating municipalities and the purchase of 20% of building energy from renewable sources.
- Issuing a million dollar loan to coalition of independent colleges for energy efficiency upgrades to be repaid through energy savings.
- Establishing the Smart-e loan program providing \$30 million in low cost capital through credit unions and community banks to support energy efficiency upgrades, solar hot water and renewable energy generation in low-income and affordable housing projects.

In addition, one of CEFIA's statutorily mandated programs is the Condominium Renewable Energy Grant Program which provides incentives and financing for clean energy sources to residential condominium associations and residential condominium owners.

Density Bonuses

Density bonuses offer developers increased density in exchange for achieving specific environmental targets. This policy tool has traditionally been used by local governments to obtain additional community benefits, such as park space and other public amenities. Its use to achieve better building performance is contentious; however, a number of municipalities have elected to do so. Arlington County's Density Incentive Program awards density in return for LEED 2009 Silver certification and a minimum 20% (commercial) or 18% (residential) energy cost savings reduction over ASHRAE 90.1-2007. Additional density bonuses are provided for Energy Star labeled, LEED EBOM certified or EarthCraft certified (affordable housing) buildings. Since 2001, the County has approved 79 projects, 27 of which were awarded density bonuses in exchange for LEED certification.

In addition, many other policy instruments, including targeted financial incentives and ESCOs (energy service companies) contribute to successful green building policy strategies.

Bundling

One policy alone cannot address the green building challenges of a community. Given the complexity of the building sector, local governments are finding that bundling policies together create synergies by leveraging one policy against another. Some successful examples of policy bundling follow.

⁶ Interview with David Goldberg, Director, Government & External Relations, CEFI (February 5, 2013).

Case Study: New York City

New York City's Greener Greater Buildings Plan (GGBP) is one of the most comprehensive municipal-scale policy frameworks in North America. Aimed at large existing buildings, the GGBP anticipates a 5% net GHG emissions reduction and \$17 billion savings by 2030, in addition to preserving 17,800 skilled local jobs.⁷

The GGBP consists of four interconnected legislative pieces: mandated annual energy and water use reporting (Local Law 84), energy building code requirements for retrofits (Local Law 85), mandated energy audits and retro-commissioning every ten years (Local Law 87) and mandated commercial tenant sub-metering (Local Law 88). The GGBP is part of NYC's PlanNYC, a 23-year sustainable growth plan launched in 2007.

Case Study: King County, WA

King County is leading by example: requiring new county buildings to be LEED Gold certified and existing buildings to report annual GHG emissions. King County uses a sustainable scorecard for its infrastructure projects, and 53% of its energy needs are met by renewable energy.⁸

At King County, a wide breadth of innovative tools have been developed to engage its 39 municipalities and their developers including eco-charrette facilitation, green building training, life cycle assessment calculators and regional building code collaboration to incentivize LEED, Built Green and Living Building Challenge certification. King County's Green Tools policies were awarded the Harvard University Bright Ideas Award in 2012 for offering a creative range of solutions to urban and rural environmental challenges.⁹

Conclusion

Communities are complex and any green building strategy must take into account the unique economic, social, environmental, and legislative context and barriers to be successful. For those reasons, designing an effective green building strategy requires an integrated policy framework that considers the context of the local community to achieve the maximum benefit for the widest range of stakeholders while minimizing the complexity and costs.



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⁷ PlanNYC Local Law 85 Benchmarking Report. August 2012. P7.

⁸ www.kingcounty.gov/environment/climate/king-county/annualreports/sustainability-report.aspx

⁹ King County 2012 Annual Report. P18.