

Philip Santiago, Association of Climate Change Officers

District of Change — The Department of General Services Transforms DC into a Climate Powerhouse

Mayor Vincent C. Gray created the DC Department of General Services (DGS) in October of 2011. The result of the consolidation of several former agencies, including those managing municipally-owned office buildings and DC Public Schools, DGS is tasked with increasing efficiency and effectiveness within the District's 400+ building (totaling nearly 30M sqft) portfolio of real estate.ⁱ Sam Brooks joined DGS in February 2012 as Associate Director, and head of its Energy & Sustainability Division, around the time Mayor Gray developed his Vision for a Sustainable DC. The plan included several ambitious climate-related goals for the District: a 50% reduction in GHG emissions, a 50% reduction in citywide energy consumption, and an increase of renewable energy use to 50%.ⁱⁱ

During the next two years, Brooks helped the District work toward these goals through a variety of high impact projects to increase energy efficiency and renewable power supply, including smart metering and efficiency data analysis, negotiation of utility-scale wind and solar power purchases agreements (PPAs), and purchase of RECs to cover 100% of city power use. The Association of Climate Change Officers (ACCO) spoke with Brooks about the Department's current and future work on energy and climate change mitigation, and gained valuable insight for energy management and climate officers working in both the public and private sectors.

Game-Changing Energy Efficiency Through Real Time Data

With advanced meters on the majority of its buildings and a partnership with the local utility PEPCO, DGS launched its Game Change program in 2013. The initiative, which collects energy data from most of its facilities in 15-minute intervals, moves beyond traditional analysis of monthly billing info. Brooks says DGS's work to improve operational efficiency rests on two key assumptions about using energy data to drive savings: it must be actionable, and it must be radically transparent.

Every day, DGS collects 15-minute interval data and displays it on BuildSmartDC.com. Analyzing this detailed usage information is critical to identifying opportunities for reduction and savings, and allows for fine tuning of building operations (e.g. building scheduling) that are impossible to identify using

ⁱ <http://dc.gov/DC/Mayor/About+the+Mayor/News+Room/Mayor+Vincent+C.+Gray+Nominates+Interim+Director+Brian+Hanlon+to+Helm+Department+of+General+Services>

ⁱⁱ <http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/publication/attachments/sustainable%20DC%20Vision%20Plan%202.2.pdf>

standard monthly billing information. Combined with other facility upgrades such as programmable HVAC control systems, the Department is able to identify and eliminate energy waste, saving on average 5-25% per building. DGS estimates over \$10M in annual potential savings opportunities through upgrades of this kind.

Visibility of this data is also important to the success of the program. BuildSmartDC.com is a public site, and users can provide feedback and make suggestions for how energy efficiency can be improved in the buildings they use every day. They can also see how their buildings compare to others in the District. By making the information transparent and interactive DGS is helping to change the energy use culture and behavior of facility managers and end users in DC communities.

As Brooks put it, “If you’re trying to lose weight, you don’t weigh yourself once a year.” DGS’s energy data means that DC is getting on the scale every day.

Energy Portfolio Diversification and Risk Mitigation

DGS has sought to add renewable power sources to its energy portfolio with the goals of decarbonizing its supply, decreasing costs, and reducing risk associated with exposure to fossil fuel price volatility and supply. To these ends, the best course of action was to negotiate large, long-term PPAs for renewable generation sources — and DGS has used the District’s sizeable energy demand (over 400 million kilowatt-hours per year) to solicit bids for 20-year agreements at competitive rates.

In 2012, Brooks helped the District negotiate its first-ever PPA, enabling a 463KW photovoltaic (PV) array on the roof of Dunbar High School to be constructed with zero city capital or debt incursion.ⁱⁱⁱ Then, in late 2013, the District began work to scale up its direct purchasing of renewable energy to unprecedented levels. The District underwent a massive off-site competitive procurement, including more than 40 interested projects, that resulted in the government selecting a winning bid for a ~50MW wind farm. This groundbreaking deal, more details of which will be announced in the coming weeks, is likely the largest renewable power purchase of its kind by a government agency, and it will lock in low, stable energy rates with zero carbon footprint for the next two decades.

Brooks says that for DC going with long-term renewable PPAs is a “no-brainer.” These PPAs must be large in order to attract the most cost competitive rates from suppliers, but once in place they insulate the purchaser from fossil fuel price volatility. Brooks points to wild fluctuation in natural gas prices this winter as a perfect example of why it is important for governments and private companies to decrease their exposure to traditional supply markets.^{iv} He believes energy mix should be managed in much the same way as a financial portfolio, and that playing “energy supply roulette” by relying solely on carbon-based fuels makes no sense, particularly when thinking in 10-to-20-year timeframes.

ⁱⁱⁱ <http://dgs.dc.gov/release/dunbar-high-school-kicks-vibrant-solar-panel-initiative-district-rooftops>

^{iv} <http://www.marketwatch.com/story/natural-gas-price-swings-are-off-the-charts-2014-02-14>

Follow The Leader

The type of progress that DGS is making on sustainability is not limited to government institutions. The private sector can just as easily take advantage of energy efficiency measures like the ones DGS is putting in place. While DC was able to strike a deal with PEPCO to receive smart meter data at little or no cost, it is relatively simple for businesses to put in their own metering infrastructure at very low cost. In practically every case, the savings reaped from these improvements dwarfs the small initial cost of the upgrades.

Brooks notes that one of the problems in getting traction for efficiency and renewable energy projects is inertia. There is a tendency among larger organizations to “wait for utopia” before acting, he says, though many of the most successful and cutting-edge companies like Google are already pushing the envelope in terms of renewables and energy efficiency.

Brooks believes that more companies and governments will get on board when they see the benefits that early actors are reaping. “The more Googles and DCs you have, the more willing others will be to follow,” he said. “It’s hard to go first, easier to go second, and a whole lot easier to go fourth or fifth.” DGS has shown there are huge payoffs for capitalizing on the economic opportunities already available in the energy market. Whereas lack of political will is often a roadblock for climate work, Brooks cites Mayor Gray’s Sustainable DC Plan and leadership on the issue as “a huge wind in our sails.”

Future Directions

Next steps for DGS will be to solicit bids for a massive solar power installation. Onsite solar is the last obvious piece of the puzzle for DC to add after wind and efficiency. The project will involve more than 40+ sites for a total of about 10MW of solar power, and may end up becoming the biggest single onsite solar deployment by a city government. DGS hopes to have the project out for bid in March, and choose a winning bidder by the summer — although this depends on how many bids are received.

DGS is also currently conducting a study to determine the engineering feasibility of a combined heat and power (CHP) cogeneration facility to power at least four different DC government properties, including a high school, a recreation center, possibly expanding to a hospital in the long term. The Department is also looking into options for increased energy storage within the city to complement the renewable energy additions it is making to its portfolio. This will help reduce exposure during periods of peak energy demand, such as summer daytime when air conditioners are running at maximum.

About Sam Brooks



Sam Brooks is Associate Director of DC Department of General Services, where he also heads the Energy & Sustainability Division. Since joining DGS, Brooks and his team have worked to create a new model to reduce cost, risk, and carbon for energy supply in an urban built environment. Notable initiatives include: 'Game Change' leverages unprecedented data acquisition program to drive \$100M in efficiency savings over the next decade; BuildSmartDC.com provides one of world's most transparent views of building energy performance (DGS: 27M sqft real estate portfolio); historic deployment of direct renewable supply (including off-site 46MW wind farm and massive on-site 10MW+ solar deployment) will lower costs and reduce price-risk exposure for \$75M in annual energy spend. Brooks previously started and ran a local efficiency-contracting firm. He is also still recovering from a decade in political campaign management.

About ACCO

The Association of Climate Change Officers is a 501(c)(3) non-profit membership organization for executives and officials worldwide in industry, government, academia and the non-profit community. ACCO's mission is to define, develop and support the functions, resources and communities necessary for effective organizational leadership in addressing climate-related risks and opportunities. For more information about ACCO, please visit <http://www.accoonline.org>.

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