



leveraging
partner success
toward economic,
environmental and
structural sustainability



viridiant

April 2017

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moderator: Bob Adams, President, HDAdvisors

Mr. Adams is the President of HDAdvisors, a firm that provides a range consulting services to non-profit, for profit and public sector clients. Among his current clients, Bob serves as a technical advisor to Virginia Community Capital – assisting non-profits and local governments in developing viable community development projects. Bob also provides staff leadership for Housing Virginia – a statewide non-profit organization that works to advance affordable housing through education and policy development.



panelists:

Art Bowen

*Managing Director
Virginia Housing Development Authority*

Mr. Bowen serves as Managing Director of Rental Housing with the Virginia Housing Development Authority. He is responsible for VHDA's \$3.2 billion rental line of business including loan underwriting, servicing, compliance and asset management, and LIHTC program management.



Andrew McCoy

*Director
Virginia Center for Housing Research*

Dr. McCoy serves as the Director of the Virginia Center for Housing Research at Virginia Tech. He has over 15 years of experience in the architecture, engineering and construction industry. Dr. McCoy has been the primary or co-primary investigator on more than four million dollars in funded projects, including 'green' construction practices, building technologies, affordable housing and safety practices in the construction supply chain.



Angela Navarro

*Deputy Secretary of Natural Resources
Commonwealth of Virginia*

Ms. Navarro currently serves as Deputy Secretary of Natural Resources for Governor McAuliffe. In this role, she works on clean air, land conservation, historic preservation, and energy policies. She staffs Governor McAuliffe's Climate Change and Resiliency Commission, Confederate Monuments Workgroup, and Executive Order 57 Workgroup.



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In coordination with Viridiant's Annual Sustainable Leadership Awards, Viridiant hosted a panel discussion titled, "Leveraging Partner Success Toward Economic, Environmental and Structural Sustainability." Moderated by Bob Adams of HDAvisors and Housing Virginia, the discussion highlighted the respective work of the panel members and explored the relation to and impact of green building. Year one findings published in "The Impact of Energy Efficient Design and Construction on LIHTC in Virginia" reported significant energy and utility savings as well as affordability, comfort and quality of life benefits for residents living in EarthCraft Multifamily certified developments. On average, energy usage was 16.6% less than modeled and 30% less than standard new construction, which, based on 2014 energy rates, equals savings of \$54 per month.

Research Highlights

Multi-year EarthCraft Multifamily Study Highlights Environmental, Economic and Structural Sustainability

- Virginia Housing Development Authority (VHDA) green building incentives in the Low-Income Housing Tax Credit (LIHTC) program have been successful in promoting affordable housing development that saves residents on average 45% on their annual energy costs at little cost difference compared to standard housing.
- Over 3 years, residents of sampled LIHTC units are saving more energy than estimated in design and construction, saving more energy than observed in year one (Y1) and saving more energy than new standard construction estimates.
- From low-income to extremely low-income housing units, residents can save between 3.1% and 8.3% of total annual housing costs from energy efficiency respectively.
- Over 3 years, building technology and resident behavior continue to be strongly correlated yet fewer variables remain significant in reducing energy consumption.
- Research suggests that education on high performance home technologies is an opportunity for significant energy usage and cost savings. Residents with education had a lower average energy usage monthly and annually (over 3 years) by almost 15% (14.8%) and a lower energy bill by \$10.56 per month.
- The difference in the total cost between green and non-green LIHTC developments is not statistically significant nor does cost statistically correlate to energy usage in the unit. Builders have been able to provide affordable green housing at less cost per square foot than non-green in this program.

April 2017

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The Role of Policy

The Governor's Role in Promoting Economic, Environmental and Structural Sustainability

- The Governor's Housing Policy Advisory Council demonstrated that 2015 economic contribution from the housing industry was Virginia's 6th strongest economic industry, contributing \$47.8 billion and over 314,000 jobs (Figure 1).

VHDA's Role in Promoting Economic, Environmental and Structural Sustainability

- The LIHTC program incentivizes building rental units to achieve EarthCraft (or LEED) certification.
- VHDA has seen increasing participation in EarthCraft certification - 33% of applicants selected EarthCraft certification in 2003, 100% in the last 5 years.

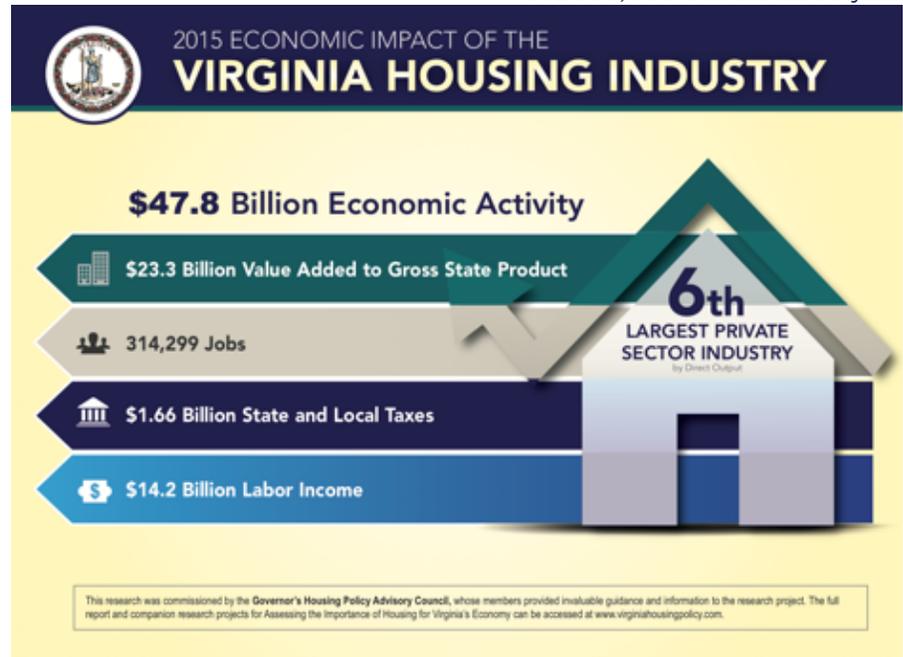


Figure 1.

- In 2015, Governor McAuliffe created the Governor's Executive Committee on Energy Efficiency.
- These funds are also supporting work to standardize Commercial Property Assessed Clean Energy (C-PACE) financing regulations in Virginia, Maryland, and Washington, D.C.
- Progress Towards 10% Goal: What is currently planned by the two major utilities gets Virginia 24% of the way towards meeting the 10% conservation goal (Figure 2).

- Additional incentives are provided for EnergyStar appliances and materials, WaterSense fixtures, and high efficiency HVAC.
- VHDA has a new incentive for utility benchmarking and monitoring.

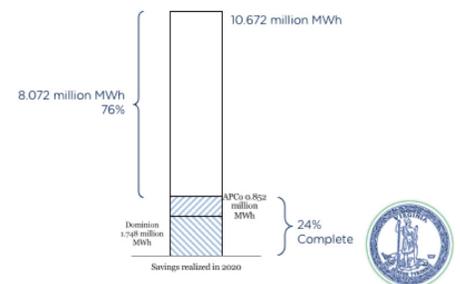


Figure 2.

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toward economic,
environmental
and structural
sustainability

The Intersection of Housing, the Economy and the Environment

Facing state energy conservation goals and the need to provide quality, affordable housing, Viridiant has demonstrated effective implementation of the EarthCraft program as a strategy to meet both energy and housing needs. Furthermore, three year findings from VCHR show the difference in the total cost to build between green and non-green LIHTC developments is not statistically significant, and builders have been able to provide affordable green housing at less cost per square foot than non-green with the EarthCraft program.

As shown in Figure 1, the housing industry was Virginia's 6th strongest economic industry in 2015, contributing \$47.8 billion and over 314,000 jobs. Recognizing both performance and cost effectiveness of the EarthCraft program delivered via Viridiant, green building is a viable option to improve quality of construction while conserving energy.

Moving Forward

With Virginia's stated energy reduction goal of 10% by 2020, green building technologies have demonstrated measurable energy savings at no cost difference. Further efforts to incorporate resident education will contribute to increased energy and utility cost savings. End use energy measurement is anticipated to improve across industry sectors and current benchmarking incentives in housing will enable performance improvement.

