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After more than a dozen years as an active, passionate member of the green building community and USGBC, I'd like to tell you that energy efficiency is easy. The 'Nega-Watt' is a beautiful fuel source, but unlocking its full potential has kept me up many sleepless nights. Scaling its potential is a critical pathway to a regenerative future. If financial markets are to be convinced to invest in large energy efficiency loan portfolios, they need to know if the electrons really can be mined predictably.

Queue one of the largest experiments to tap the energy efficiency potential of an urban core. We call it Energize Phoenix, and I jumped at the opportunity to be involved when the program began two and a half years ago.

Imagine the work required to design and deliver exemplary energy efficiency in a new building, layer on the increased complexity and constraints of an existing building, and then multiply it by 600 or so buildings and hundreds of homes and apartments, each with a unique history and engineering challenges. It's like playing with Legos where each one is hand-carved. As for the tools we've got for the job, picture hundreds of firms and professionals of varying skills and a mash-up of adrenaline and expertise across three very different large institutions working with a time-limited investment of federal funds. Such is the complexity of our initiative. Energize Phoenix is a three-year, $25 million ARRA-funded program intended to create a viable and replicable large-scale model of urban energy efficiency. Our project area is a 10-square-mile urban corridor along the Metro light rail.

I lead a team of engineers, architects, geographers, economists, behavioral scientists and policy analysts at ASU's Global Institute of Sustainability whose role is to measure what works and how well, in order to move the industry forward. We started in 2010 and expect to wrap up by the end of this year.

So, what have we learned so far? A lot. Read our Year Two Report and stay tuned for the final analysis that we'll release later this year as well as our Energy Efficiency Idea Guide, set to debut in the coming weeks. In the meantime, here are some major takeaways: (Warning! Please DO try this at home!)

1. **Flexibility is key.** The built environment and the people who use it – even within the center of one Southwestern city – are very diverse. We've recognized a need for a portfolio of programs, approaches and expectations that can appropriately adapt to our diverse audiences.
2. **Base hits are good.** Trying to sell building owners on a whole-building, deep energy retrofit all at once is possible in a few cases, but 'energy literacy' is generally low and not a high priority topic for most. And contractors specialize. So, it's okay for participants to test out energy efficiency through a small project like lighting. Many come back for more.
3. **Quality Control.** People come back and refer others if they have a positive experience. Workforce development, standards and quality control support increased participation.
4. **Being real about real energy savings.** We can absolutely account for real energy savings, but the truth is that customers are not saving as much as they are being told to expect. Luckily, their return on investment is still strong. We're trying to uncover the causes of discrepancies and improve the accuracy of estimates.
5. **Financing is no silver bullet.** During times of uncertainty, companies and individuals are not inclined to take on additional debt – even if return on investment looks very appealing.
6. **It's about the money, but there's more.** Preliminary results indicate that financial savings is the top motivator for making an effort to conserve energy for both residential and commercial audiences. However, businesses who participate also believe energy conservation helps them market and be more competitive. . Residential participants indicate that other motivations, such as the environment and future generations, are also important.

So, what's next? Incoming program and utility data will vastly increase the size of our dataset and allow for much stronger analysis. An additional output will be a policy guide, offering forty-one ideas for policies, programs or initiatives that can expand the market and grow the savings achieved by energy efficiency efforts. While these recommendations will be tailored to Arizona policymakers, much of what we're learning is useful to communities anywhere.

Tapping the full potential of energy efficiency can be difficult, but Energize Phoenix is working hard to make it easier for you and your community.

Mick Dalrymple is a former board member of the U.S. Green Building Council and a volunteer since 2001 on chapter, regional and national committees and task forces. The Global Institute of Sustainability is the hub of Arizona State University's sustainability initiatives. The Institute advances research, education, and business practices for an urbanizing world.

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