

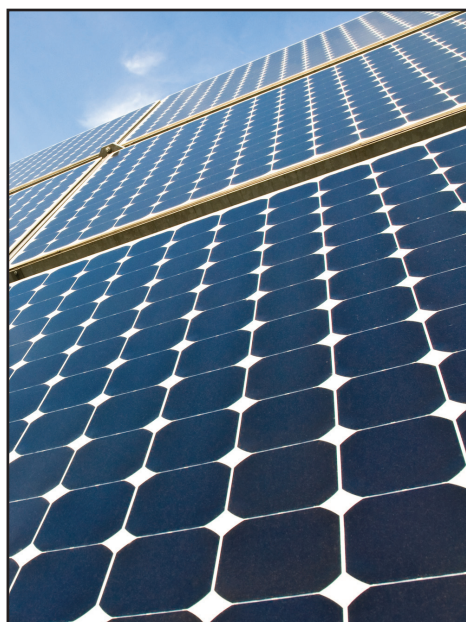
"ET" is the new "IT" for Landlords and Tenants

A research report prepared for the Steven L. Newman Real Estate Institute, Baruch College, CUNY, by contributing author Ronald Bowman, Jr., Executive Vice President, Tishman Technologies, New York, NY.

The deregulation of the telecommunication industry in the early 1990s spurred a host of new innovations, as well as a large network of vendors who all claimed to offer value-added services to commercial and residential high-rise building owners. In much the same way, the deregulation of the energy industry in 2003, as well as the current nationwide focus on environmental efficiency, has created not just innovation, but also a new crop of vendors eager to sell their services. This time, however, building owners are much less willing to take a risk on these innovations. Partly, this is because nearly 80% of the IT vendors who came calling during the telecom boom are now out of business along with the technology they were selling, but it's also partly due to the general challenge of obtaining financing in today's tight capital marketplace. However, unlike the telecom boom, the energy technology boom of today offers real solutions for decreasing a building's energy costs and will help to ensure the availability of reliable power.

Although the fundamentals of power and cooling are simple, achieving higher efficiency in a cost effective way is not always easy. In addition, making economic sense of Corporate Governance best practices, the Troubled Asset Relief Program, the American Recovery & Relief Act, and other energy conservation and energy creation methods is a full time job. From a financial perspective, such improvements can be a challenge to the investment community, as well.

The goal of this paper is to illustrate the ways in which both government and the private sector can help ensure that effective new energy technologies (ET) are fully utilized. Once energy conservation programs are in place, the next and more meaningful phase of energy reduction is on-site energy creation. Note that these suggestions should be viewed within the context of the marketplace conditions for urban real estate, since the following dynamics are our reality.



- Human population growth in the US increases by 1.5% per annum
- Electrical demand growth in the US increases by 1.90% per annum
- Telecom bandwidth demand doubles approximately every 18 months
- 90% of real estate leasing transactions are 10,000 square feet and smaller
- Small business users dominate urban environments
- 80% of the world's population will live in cities by 2040

Although much of the "offensive" spending on IT enhancements may not have delivered the benefits promised by the vendor, often the "defensive" realities of an enhanced IT infrastructure did in fact help retain existing tenants, attract new tenants, and help the property remain competitive in a down market. We expect to see similar dynamics for ET. Also, IT offerings have simplified, and we can expect ET solutions to, as well. For example, three IT vendors were at one time required for voice, video and data, whereas one vendor can now provide these services. Fiber optics is now available to almost every urban asset, and the overall quality is very good.

The commonality for built "IT" and "ET" solutions in urban environments is that they both require precious real estate to house the necessary equipment. For IT, this includes utilizing roof space, Point of Entry (POE), setbacks, basement space, Right of Way (ROW) and vertical riser's space, whereas for ET, it includes utilizing roof space, basement space, near switchgear, ROW and vertical risers for gas riser and floor space for thermal storage. Although ET equipment typically consumes more rentable space than IT does, the percentage difference shrinks as the size of the building grows.

Both ET and IT are applicable to the small office and home office market (or SoHo), the fastest growing segment of the real estate marketplace. People working from home have far surpassed the office "hoteling" phenomena of the 1980s and 1990s. Large corporations and small businesses have a new and disproportionate amount of full time W-2

employees as well as 1099 consultants working from home, largely because the IT solutions work well enough to make defraying the operating costs of full time employees viable. However, telecommuting is also completely dependent on ET working and being reasonably priced. While that may have been a given in the past, it is certainly not a given in the future.

Energy demands are now forecasted to outpace the energy supply sometime between the years of 2015-2017. With deregulation "reserves" of power at an all time low (10-15% in many parts of the US), reliable power¹ is hard to find. Before deregulation, most energy providers maintained reserves of up to 25%. However today, since the market is deregulated, energy companies are effectively penalized for excess capacity in the same way that traditional manufacturers are penalized for excess inventory -- with a depressed stock price.

For reliable power, users and multi-tenant assets need to base load or partially load their assets with self-generating energy solutions. This offers tenants and property owners the following advantages:

- Making power can often be less expensive than buying power in many parts of the US
- De-risk the operations or tenant use of the Grid's unplanned interruptions
- Attract new tenants by marketing the increased environmental efficiency
- Position the asset for the highest and best use and future sale. Forward thinking assets will sell and sell at a premium.

There are several market barriers for ET deployment in the current economic environment, as listed below.

- The field conditions for urban and vertical assets make building decentralized energy solutions a constructability challenge, which can

increase capital construction costs and delay the ROI or payback. Technology push needs economic pull or additional incentives to make it work.

- There is always a reluctance to pick a specific energy technology for fear that it may not stand the test of time and/or may end up in the future without support.
- There is a lack of real capital available from the private sector and/or government lending sources specifically for energy creation use rather than for building retrofit and weatherization projects.

Some believe that the government at the state, local, and federal levels has met the existing challenges with timely and appropriate tax incentives in new legislation in TARP, ARRA, and the Energy Bill of 2009. They are not wrong, but these incentives are inadequate. In order to make urban decentralized energy solutions viable, the following conditions are needed.

1. Property owners need tax incentives in the form of 3-5 years tax forgiveness for real estate committed to and associated with decentralized improvements to justify the upfront cost. A 30% tax rebate on all soft costs, land costs, and commissioning is currently available but inadequate.
2. Energy banks are needed for small asset backed leasing to deploy solutions. Manufacturers are often willing to finance \$5-500M plants based on user credits but most solutions needed are valued between \$2-20M. The financing needed to make a \$2-5M project viable is not presently available, even though the great majority of urban ET projects will be within this range.

To make ET solutions a "need-to-have" rather than a "nice-to-have", they must provide a real reduction in emissions, meet new corporate governance guidelines, keep existing tenants, and attract new

tenants without becoming financially onerous to the owner. Then and only then can ET become as ubiquitous as IT is.

There will be no shortage of vendors on solutions in the ET field similar to the IT vendor and solution expansion of the mid to late 1990's. There are solutions for problems we do not have, and there is a turf war of metrics, monitoring devices and basic nomenclature for energy conservation and energy creation.

Like with IT, the world of ET will be dominated by a few common sense solutions by companies with the intellectual capital and financial wear with all to deploy solutions and support of the appropriate personnel. However, to ensure that effective energy technologies are fully utilized, additional tax incentives for property owners and readily available funds for energy projects under \$5M are needed. ■

¹ Reliable power differs from dependable power, since dependable power signifies that access to the Grid is always available.

This research report is published by the Steven L. Newman Real Estate Institute, Baruch College, CUNY.

The Newman Real Estate Institute gratefully acknowledges the support of the sponsors who make possible our efforts to promote critical thinking on topical issues for the real estate industry.

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