



Needed: Electric Submetering

“MASTER-METERING” IN COOPERATIVE HOUSING IS UNFAIR, EXPENSIVE, WASTES ENERGY

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From 1951 to 1978, sponsors of private and government-assisted cooperative housing faced a choice about how to provide and pay for future electric use: Should shareholders pay the utility directly for their consumption, or should the cooperative be “master-metered” and receive bulk billing for the entire building? Would a master-metered situation mean discounted rates and building-wide savings, or would it promote unfair allocation of charges?

At the time, energy—electricity, in particular—was relatively inexpensive. Electrical use was only a fraction of what it is today. Many electrical appliances and products currently in use had not been invented by 1950. Microwave ovens, dishwashers, VCRs and frost-free refrigerators, staples in today’s kitchens, have only penetrated the market in the last two decades. The recent trend toward home offices, complete with computers, faxes, scanners and phone machines, was yet to be imagined. There was no need and little incentive for energy conservation to enter into billing decisions.

With the approval of their government partners, most developers of limited-equity cooperative housing opted for master-metered electric service. Because so few electric dependent products even existed, consumption could not deviate significantly among individual apartments. At the same time, electricity was cheap, and they would receive a volume discount. Spurred by ill-conceived state regulations, they made a big mistake—as they were to discover with the first worldwide energy crisis in 1973/74.

A LOOK AT THE ALTERNATIVES

At first glance, master-metering makes financial sense for large buildings. Under a master-metered billing system, the electric use of the entire building is measured by just one meter (or, in the case of large multi-building developments, by several centrally-located master meters). By purchasing power in bulk, the building receives 20-30 percent discounts from their local utility. Depending on building usage patterns and the time of year, savings per kilowatt hour can be considerable.

On the other hand, because the actual cost of utilities is masked within monthly maintenance charges, many shareholders perceive utilities, especially electricity, to be “free” and so have no impetus to reduce consumption. They often live in the apartment equivalent of a gas-guzzling 1968 Pontiac Catalina—and the entire building foots the bill for their excess.

An alternative billing system is direct or individual metering of electricity. Under this system, the local utility measures and bills residents for the actual electric energy they use in their individual apartments. (In New York City, Con Edison employs mechanical apartment meters to record usage and determine monthly charges.) While direct metering encourages individual conservation, it does not yield bulk rate discounts.

A third method of measuring consumption, however, offers the opportunity for discounts while encouraging conservation: Master-metered buildings may measure electric usage internally by “submetering” defined areas such as public and commercial spaces, as well as individual apartments. *This internal measurement should not be confused with direct metering by the utility:* Power can be purchased at the discount bulk rate of the entire building, so that the cost per kilowatt hour is substantially lower than in direct-metered apartments. The lower cost can then be passed on to individual units. At the same time, individuals have a record of the electricity they use.

NEW YORK STATE AND THE PURCHASE OF POWER

Despite the apparent advantages of submetering, between 1951 and 1978 it was illegal for mastermetered buildings in New York State to

measure or submeter individual unit consumption for billing purposes. This effectively prevented buildings, including many cooperative corporations, from passing charges equitably and fairly on to those who actually incurred them. While the law was designed to protect tenants against landlords who might manipulate billing charges, it seems unnecessary for cooperatives which are built on principles of fairness and governed by the shareholders themselves.

Nevertheless, cooperatives were subject to the same rules as rental buildings. Even those that were already submetered were forced to adopt a prorated formula to apportion electric costs.

New York State could not foresee the radical changes in energy production and consumption that were to take place in the coming decades. It could not conceive that its 1951 regulations would spur intemperate attitudes and irresponsible habits.

Energy is of special concern in New York State where electricity has become an enormously precious commodity, most especially in densely populated areas such as New York City, Long Island and Westchester. In fact, energy prices and availability have played havoc with state economic development strategies for years, as politicians and policymakers have struggled to build responsible energy policies that promote a competitive business environment.

In 1978, in response to the energy crises, the New York State Public Service Commission (PSC) focused its attention on ways to lower energy costs. As a first step, the PSC reversed its 1951 regulations in order to allow submetering and, in fact, to prohibit future master-metered construction without submetering. The PSC's Demand Side Management office encourages submetering as a cost-effective incentive for residents in master-metered buildings to monitor consumption and use energy efficiently. Today, local and national government agencies and countless organizations and individuals have joined the PSC in embracing submetering.

Yet despite this imprimatur, a majority of shareholders in New York cooperatives must vote in favor of this cost-saving measure before it can be implemented, effectively slowing the process of reform. The PSC is currently poised to adopt more liberal voting criteria that would permit the majority of voters, rather than a majority of shareholders, to endorse submetering implementation.

In the meantime, many master-metered cooperatives still exist, anachronistic and out of step with today's concept of energy conscious-

ness—and patently unfair to shareholders.

ADVANTAGES OF SUBMETERING

Submetering promises to encourage wise energy practices among shareholders and allow them to save from their reduced use. Critics of submetering, however, feel it runs counter to the system of sharing that underscores the cooperative way of life. They cite the principle of equal economic participation under which cooperative maintenance fees are structured to include all building-wide expenses and are apportioned by the numbers of shares allocated to each cooperative unit in the initial offering plan.

However, each shareholder derives fixed and proportionate benefits from such building-wide expenses as management, insurance and heating fuel. (Few New York apartments have thermostats to regulate unit heating). On the other hand, shareholders use differing amounts of electricity, based on their own circumstances and whims. While a pro-rata billing system is fair for building-wide expenses, it is definitely not fair when individual apartment electrical usage can be accurately measured for billing purposes. As an illustration, suppose one shareholder is among the more than 25 million Americans who run businesses out of their homes with the operating aid of a computer, printer, fax and answering machine, lights and air-conditioning. Although his neighbor goes to an outside work location every day, his share of the utility bill is the same. Can that be called fair?

In another example, a young family of four, equipped with two televisions, VCR, microwave, washer, dryer and more, lives next door to an elderly woman with few of today's "convenience" appliances. Yet their share of the co-op utility bill is the same. Can that be called fair?

Inequities such as these abound in coops, and the gap between residents using more and less electricity than average is widening. As one group increasingly subsidizes an electric intensive resident class, the concept of sharing is clearly disingenuous. Ironically, it is often senior citizens living on fixed incomes who are doing the subsidizing.

With master-metered electricity costs (without submetering) accounting for an ever greater portion of each maintenance dollar, the appeal of personal responsibility for electric use behavior is undeniable. It is also more in line with cooperative values of equity, social responsi-

bility and caring for others than is a misunderstood interpretation of sharing.

Cooperative corporations have been effective at controlling thermal energy (heat and hot water consumption), however, they have been almost impotent in reducing electric consumption.

Most limited equity cooperatives built before the 1973/74 energy crisis are master-metered. Since they do not pay for their electric usage, residents have no idea how much energy they use and have little impetus for more efficient energy practices.

Cooperative shareholders pay significantly for their squandering. Recent studies indicate master-metered cooperatives use (and pay for) 20-30 percent more electricity than in cooperatives where shareholders are charged for their actual use. However, because the cost is hidden within monthly maintenance in mastermetered units, these shareholders are usually unaware of the implications of unrestricted usage. Because shareholders do not pay for the specific electricity they use, they are denied the opportunity to save money by adopting wise energy consumption practices.

THE THREE STRUCTURAL "UNFAIRNESSES" OF MASTER METERING

The very structure of master-metered billing promotes unfairness. It encourages excessive consumption, promotes "first cost" versus "life cycle" purchase decisions, and nurtures an obsession about "getting one's money's worth"—all at the expense of others.

The first "unfairness" is an almost sinister inducement of wanton consumption that leads to ongoing strife among shareholders. Quite simply, people living a conserving life subsidize those with frivolous electric consumption practices. In an obvious example, senior citizens who live on fixed incomes and use little electricity subsidize large families with scores of electrically intensive products.

Walking by a master-metered development at night, one is struck by the incredible use of electric lights, far and above buildings where residents pay directly for electricity. Why not, "*it's free.*" Since they do not pay based on usage, people living in master-metered buildings have no impetus to exercise prudence in electric usage. Fairness, individual responsibility and the opportunity to save are not intentionally brushed

aside, but these concepts do become irrelevant.

On the other hand, people who pay for their electric usage consciously adopt a responsible attitude towards that use. It is a simple incentive system: You pay less, the less you use. Shareholders in master-metered buildings act in accordance with this concept every day when they talk on the telephone and drive their automobiles. Yet conservation seems meaningless for the use of lights, air-conditioning and micro-waves.

Some people believe that submetering discourages the sense of sharing that underlies the spirit of cooperatives. However, a closer examination proves this notion to be unfounded. The principle of sharing assumes a "give and take": If I borrow a cup of sugar from you one week, I will lend you what you are short of whenever you need it. There is little expectation of a direct payback under such a neighborly arrangement. The simple friendly accommodation just makes you feel good.

In a master-metered building, however, the same apartments consume an above average amount of electricity and the same units use less month after month. There is no element of sharing or reciprocity here. Simply put, tenants who use electricity wisely are subsidizing their imprudent neighbors each and every month. They are being taken advantage of without their knowledge or approval. This manifestation of master metering is inherently unfair.

The second unfairness is perhaps more onerous: If the first unfairness causes people to subsidize their neighbors, the second denies them the benefit of an ethically conserving life-style. It encourages people to make purchasing decisions that will cost them and their neighbors more money in the long run, especially for the use of air conditioners, refrigerators and even light-bulbs.

The reason is simple. Energy efficient products and appliances are more expensive than less efficient models, but they use less electricity for the same work and during the life of the product cost considerably less to operate. If one does not pay the ongoing operating costs directly, one is far less likely to favor a product's "life cycle cost" over its "first cost" when buying a product or appliance.

Shareholders in master-metered buildings make such collectively imprudent economic decisions countless times throughout the year. Why pay more for a product that yields the purchaser no discernible benefit? Instead, they purchase cheaper, inefficient products, and all shareholders suffer every time they are switched on. If they are used with abandon,

the economic cost is magnified further.

The last structural unfairness is most insidious because few people would admit to this behavior: No one likes to be taken advantage of, but some people are consumed with getting their “fair share.” While not widespread among cooperatives, this obsession cannot be ignored. Shareholders in master-metered developments will need to judge for themselves if it rings true in their co-op.

Here is how the obsession grows. Many mastermetered cooperatives, in an attempt to counter spiraling costs of electricity, have instituted monthly surcharges for air conditioners and, in some instances, other appliances. They charge shareholders \$10 or more per month for each air conditioner in the apartment. A shareholder with two air conditioners could wind up paying a monthly surcharge of \$20, or \$240 for the year— without ever switching the units on.

In response, some shareholders overuse air conditioners to assure they receive a fair share of what they have been paying for all year long. Like passengers who overeat on a cruise ship, they want to get their money’s worth, even if it means gaining 10 extra pounds. In a master-metered co-op, “getting a fair share” means leaving the air conditioner on while at work or out for the night so that the apartment is cool when you get home. This behavior is inconceivable to those who pay directly for electricity. High users often rationalize by saying, “We don’t pay — the building pays.” They need reminding that they and their neighbors are the “building,” and everyone pays extra for them. Structurally induced selfishness is a common effect of master metering.

SUBMETERING:

A DOCTRINE OF FAIRNESS

Electric submetering allows cooperatives to enjoy the bulk electric rate available to master-metered developments while establishing an equitable, incentive-based system which promotes responsible electric practices. Submetering permits the electric usage within designated spaces to be accurately measured. It enables cooperatives to develop programs which help determine how electricity is used, and it sends meaningful price signals to residents about their rate of usage.

The most common method of accomplishing an equitable submetering program is for cooperatives to reduce unit maintenance

charges by the average cost of electricity for the unit (adjusted by room count) minus 25 percent for public space electric use (e.g., hallway lights, elevators, laundry rooms, etc.). Surcharges for air-conditioners are also eliminated.

Then, each shareholders is billed for his or her actual consumption in kilowatt hours at the master-metered rate charged by the utility to the entire cooperative. Administrative fees of \$2 to \$3 are often charged to read meters, prepare bills and service loans taken to install the requisite equipment.

This approach, however, is not the only way to promote a fair system. If there is major shareholder reluctance to actual submetered billing, cooperatives can develop rebate systems, leveled billing approaches, or phase-in plans which gradually shift from partial to full payment of monthly electric use.

Another approach called "shadow billing" provides shareholders with monthly consumption and cost information for several months before reducing monthly maintenance and instituting direct charges. This common practice gives shareholders an opportunity to modify consumption habits before the "day of reckoning."

THE IMPACT OF NEW TRENDS ON ELECTRIC USE

Recent trends indicate that disparities in usage will grow, especially in master-metered buildings, as overall consumption continues to rise. Two phenomena in particular have the potential to increase overall usage and cause electric costs to skyrocket.

The first deals with the changing generation of cooperators. Over the next few years, many government-assisted cooperatives will see original and/or second generation shareholders vacate their apartments. Many are senior citizens, now widowed, who live in apartments once occupied by their families. Statistically, they use considerably less electricity than families and often spend the winter as "snowbirds" in warmer climates. In fact, a recent sample of a submetered New York City co-op indicates that, on average, seniors use 22 percent less electricity than their neighbors.

They will be replaced by young families whose life-style calls for labor-saving appliances powered by electricity and whose children can

easily be labeled as electrically intensive. More rooms will be air-conditioned; television sets and video games will proliferate. Rarely will a unit be without a dishwasher and a microwave.

As the demographics change, electric use will mushroom. Buildings submetered for some time are already noting the change. Since submetered cooperatives charge residents for their direct usage, however, neighbors do not foot the bill for the "tapeworm" appetites for electricity of others.

The second important trend in the multifamily building environment is a growing number of people working at home, in limited-equity and market-rate cooperatives alike. In the past, individuals have used their apartments to "sideline" from their regular jobs, preparing income tax returns, giving piano lessons, writing free-lance, and undertaking a host of other artistic and commercial endeavors.

Today, several factors have influenced them to work at home on a full-time basis: Corporate downsizing has forced many "surplussed" employees to investigate self-employment. As two-income families proliferate, more women are juggling families with careers at home. Communications advances and computer technology have made it possible to telecommute. As babyboomers reach middle-age, there are simply more people willing and able to launch a business of their own.

This new breed of entrepreneurs is investing in its community and making important contributions to urban economies. While estimates of the number of Americans working at home range from 25 million to 41 million (up from just 1.5 million in the 1980 census), experts agree that the growth rate for home businesses is approaching 20 percent per year. *Crain's Business News* recently reported that Manhattan's home workers make up a full 20 percent of its work force.

Undeniably, a key inducement to working at home is low overhead. Recognizing the many benefits and contributions of home businesses, it also should be noted that the self-employed who live in mastermetered buildings are building their businesses with the help of their unsuspecting neighbors.

Essential office equipment such as computers, printers, fax machines and answering machines consume little electricity. Much more significant in a master-metered setting are the many hours of extra air-conditioning and lighting involved in running a home office, along with greater use of appliances such as microwaves and refrigerators.

The trend toward self-employment will grow steadily. It will re-

quire more abundant electricity to power those working at home—whether residents of master-metered cooperatives or submetered co-ops. Of course, the self-employed in submetered units will pay for their electric use, whereas all shareholders in master-metered buildings will charitably, but without choice, share the expense of their neighbors' businesses.

Submetering is a first step toward a new awareness of electric costs and the demand and consumption patterns of the building complex. As shareholders better understand the issues and costs, they are likely to charge their boards to investigate and take actions to reduce electric costs. These boards may seek to negotiate better rates with current energy providers, find better rates from competitors, replace utility power with on-site generation or undertake a combination of methods.

Options and alternatives will proliferate within the cooperative community as shareholders of submetered developments, sensitive to electric costs, demand innovation and action from their boards of directors.

ABOUT THE AUTHORS

Allen L. Thurgood is Executive Director of Coordinated Co-op Housing Services where he has served not-for-profit cooperative enterprises in a variety of capacities, including that of president of a regional cooperative. He also coordinates the activities of the 30-year-old Coordinating Council of Cooperatives, an association of New York City housing co-ops.

In addition, Allen is a board member of the Alexandria, Va., based National Association of Housing Cooperatives; secretary of Mid-Eastern Cooperatives; the Washington, D.C., Cooperative Development Foundation; and a member of the Board of Community Assisted Tenant Controller Housing, which addresses housing and community development needs of low-income urban residents.

Allen also serves as a member of the advisory board of the Apartment House Institute of the City University of New York, is a member of advisory panels of several governmental agencies including the New York State Consumer Protection Board and several community-based senior citizens and environmental support organizations.

Lewis M. Kwit is the founder and president of Energy Investment Systems, Inc. (EIS), a New York State corporation that specializes in

implementing energy-saving and related improvements in multifamily buildings. Under Mr. Kwit's direction, EIS has developed financing strategies that utilize private bank loans and government incentives to rehabilitate multifamily buildings in low and moderate income communities. Demonstrating the feasibility of this type of underwriting, for over 10 years, Mr. Kwit has succeeded in obtaining rehabilitation financing by accessing a variety of public and private programs.

Using SONYMA mortgage insurance, New York State Energy Office (NYSEO) subsidies, weatherization assistance and other credit enhancements, Mr. Kwit has proven to a number of lenders that EIS-developed projects are prudent and profitable. Mr. Kwit served on the State Energy Office's advisory committee for the creation of the Energy Investment Loan Program (EILP). Mr. Kwit has also worked with HPD's Article 8A Loan and Participation Loan Programs to rehabilitate multifamily buildings.

Prior to establishing EIS, Mr. Kwit directed a national urban energy policy project for the Cooper Union Research Foundation which established a series of policy recommendations in ten substantive areas. The project's policy committee consisted of Energy Directors from 15 of the nation's largest cities. Mr. Kwit made frequent presentations on energy policy at forums and workshops of the United States Conference of Mayors, National League of Cities and the National Association of Counties.