

COOPERATIVE HOUSING

BULLETIN

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THE FAIRNESS DOCTRINE FOR ELECTRIC SUBMETERING

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This essay analyzes attitudes and policies developed over the past 45 years that discourage submetering in cooperatives today. The authors suggest that master-metering without submetering is not only inherently unfair but actually abets inequity and encourages excessive consumption by cooperative shareholders. This article explains the structural impediments to submetering so that shareholders can better evaluate their options and approve equitable submetering programs. In the coming months, many shareholders in the New York City metropolitan area will have the opportunity to vote for submetering reform and adopt fair billing

policies in their cooperatives. Allen L. Thurgood is executive director of Coordinated Co-op Housing Services, Inc. and coordinates the activities of the Coordinating Council of Cooperatives, an association of New York City cooperatives. Lewis M. Kwit is president of EIS, a New York-based company that works to lower energy costs and encourage conservation in the multi-family housing field. This article was prepared with the generous support of the Amalgamated Bank of New York.

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 buildingwide savings, or would it promote an unfair allocation of charges?

At the time, energy — electricity, in particular — was relatively inexpensive. Electrical use was only a fraction of what is today. Many electrical appliances and products currently in use had not been invented by 1950. Microwave ovens, dishwashers, VCRs and frostfree 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

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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. While direct metering

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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 master-metered 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.

The energy crises of the 1970s prompted a steady rise in costs that continues to affect communities and businesses across the country. At the same time, the prudent consumption of energy has come to have an economic, environmental and political impact on the lives of each and every citizen. If

policymakers have struggled to build responsible energy policies that promote a competitive business environment. This remains a bipartisan concern today: Both Republican Governor George Pataki and Democratic Speaker of the State Assembly Sheldon Silver have recently introduced proposals to break up utility monopolies, permit competition in purchasing electricity and encourage fair pricing.

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

7th ICA Principle: Concern for Community
Cooperatives work for the sustainable development of their communities through policies approved by their members.

electric customers can live efficiently with lower electric consumption, they free up capacity for new customers. In addition to promoting economic development, energy efficient practices can reduce dependence on foreign imports and help eliminate the need for expensive new power generating plants whose costs will eventually be passed on to all ratepayers.

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

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. This plan has been developed with the input and ideas of cooperative board directors, leaders of cooperative and condominium trade organizations, and the multifamily building and energy communities.

In the meantime, many master-metered cooperatives still exist, anachronistic and out of step with today's concept of energy consciousness — and patently unfair to shareholders.

The Cooperative Movement and Principles of Fairness

Today, more than 780 million individuals live in countless cooperatives in urban and rural regions of the United States and other countries around the globe. The heart and soul of the cooperative movement, particularly limited equity housing developed for moderate income working people, can still be expressed through the Rochdale Principles of sharing common expenses for the common good. Even many market rate co-ops and government-

“Submetering promises to encourage wise energy practices among shareholders and allow them to save from their reduced use.”

assisted developments have embraced these founding principles and their emphasis on self government and self reliance.

These ideals live on as the seven governing principles of the International Co-operative Alliance (ICA). Formally adopted at ICA's 100th anniversary meeting in Manchester, England in 1995, they form the core of a “statement of identity” that opens with this declaration:

“Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, co-operative members believe in the ethical values of honesty, openness, social responsibility and caring for others.”

Designed to put these values into practice, the principles call on cooperatives to be true democracies where “one

member = one vote” and where elected boards of directors set aside personal needs to work tirelessly and diligently toward the management of their cooperatives. The principles direct cooperatives to strive to upgrade the physical integrity of their housing and to maintain high quality services in a safe and environmentally benign environment. Over the past 150 years, these cooperative principles have produced decent, safe and affordable housing — in short, a good life for all.

While addressing physical and social needs, cooperative directors are also charged to keep an eye on costs and seek ideas to stabilize and control maintenance charges. Increasingly, this has led them to investigate a wide array of energy efficiency and conservation measures and to propose buildingwide policies that reduce energy usage and save money.

Concern for community is the one new principle adopted by the ICA. It calls for cooperatives to “work for the sustainable development of their communities through policies approved by their members.” Whether one considers this community to be the co-op, the city, state or entire nation, it has special bearing on energy consumption. After the energy crises of the 1970s and the recent Gulf War, it is only prudent to reduce our dependence on imported oil; in New York City where a significant amount of electricity is generated by foreign oil, it is imperative. While energy efficiency at the cooperative and national levels is an important foundation for financial savings and energy self reliance, if electric energy is truly to be treated as the precious resource that it is, the conservationist ethic must also filter down to individual shareholders.

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

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buildingwide expenses and are apportioned by the number of shares allocated to each cooperative unit in the initial offering plan.

Allocation makes sense when shareholders derive fixed and proportionate benefits from buildingwide expenses such as management, insurance and heating fuel. 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 buildingwide 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 co-ops, 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 responsibility and caring for others than is a misunderstood interpretation of sharing.

Fairness and Energy Conservation

Cooperative leaders recall the havoc that OPEC oil price increases caused

with operating budgets from 1973 through 1981. Increasingly, cooperative boards are seeking ways to help insulate shareholders from overdependence on fuel providers and from cataclysmic price shifts.

Many buildings have opted for dual fuel capabilities so they can switch between oil and gas to meet heat and hot water needs more economically. Cooperatives have also installed separate highly efficient water heaters, in addition to their traditional boilers, that provide hot water at substantial savings during nonheating seasons. To increase comfort and reduce fuel usage, they are investing in new thermally-insulated, double-paned windows outfitted with Low E

(low emissivity) glass, gas fillers and warm-edge spacers. All of these investment decisions are saving cooperators money and, at the same time, enhancing the living environment.

Yet one of the most practical ways to reduce energy costs remains elusive. 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 housed in multi-family buildings 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

A Tale of Two Cooperatives

Little data are available to compare large cooperative developments that are master metered but do not charge directly for electric consumption with similarly master-metered developments where submetered billing systems are in effect. On New York's Lower East Side, however, two such cooperatives which exist down the street from each other allow some comparisons. They are identical in almost every physical and demographic aspect: Each development has approximately 1,700 units and 7,300 rooms in four large towers. Each is a limited-equity cooperative with primarily moderate income shareholders. Residents in each have "aged in place," so that senior citizens today represent a majority of shareholders in both complexes.

One of the two complexes instituted a submetering program in July 1981. Soon afterwards, the manager of the submetered development conducted a comprehensive analysis of costs and usage over the past year at both complexes. (The records made no adjustment for cooling degree days.) During that time, Con Edison had won two fuel adjustment increases to accommodate OPEC's 25 percent price hike, its third since the winter of 1973/74. Usage usually falls when the cost of a commodity or service rises, and this was the case in the submetered development where people paid directly for what they used: Consumption decreased by 10 percent from July 1980 to July 1981 — despite the fact that the summer of 1981 was among the hottest in recent memory. At the same time, consumption in the "utilities included" development grew by 25 percent.

The actual costs were even more disparate. Electric costs at the co-op without submetering grew \$35,000, or a whopping 59 percent, from \$59,000 in July 1980 to \$94,000 in July 1981. Even though consumption decreased, the submetered development saw prices rise as well, but only by \$10,000, or 16 percent, from \$64,000 in 1980 to \$74,000 in July 1981. To boil this down, the rate of increase at the development without submetered billing was three-and-a-half times that of cost escalations at the submetered complex.

Based on these statistics alone, it is clear that an ethic of energy conservation is well able to buffer the impact of skyrocketing electric costs. Although there have not been any major price shifts since the study, the gap between electric costs at the developments has continued to widen, growing from \$85,000 in 1988 to \$297,000 in 1995. During that eight-year period, the difference totaled an astounding \$1,729,651.

In an attempt to mitigate the growing costs of electricity, the board of directors of the non-submetered development imposed a surcharge on tenants owning air conditioners. At \$13.50 per air conditioner per month, building surcharges totaled more than \$314,000 in 1995. The surcharges are only for owning an air conditioner, however, and have no relation to its use. As seen in the following section on prorated electric billing systems, these surcharges actually encourage excessive electric usage by shareholders.

little impetus for more efficient energy practices. This cannot be considered consistent with the Rochdale Principles of cooperative living and fairness.

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 master-metered 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 lifestyle 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

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meaningless for the use of lights, air-conditioning and microwaves.

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 lifestyle. 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 discernable 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 cop-

Here is how the obsession grows. Many master-metered 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.

Whether intentional or not, the notion of taking maximum advantage of a situation, the assurance of being on the receiving rather than the giving end, widens the disparity of electric usage between apartments and drives up everyone's costs. It is difficult to justify how this "sharing of expenses" furthers

Say a fluorescent, energy-saving light bulb costs \$18. Expensive — but it will save \$90 in operating costs during its lifetime. Minus the original price of the bulb that amounts to \$72, or a nickel savings for each shareholder in a complex of 1500 units. But who would spend \$18 to save a nickel? When multiplied thousands of times each year, the costs of such decisions become significant.

the common good. Indeed, we propose that cooperative values of "honesty, openness, social responsibility and caring for others" are the exact opposite of a structurally induced selfishness that 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 shareholder 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."

"Submetering denies people the benefit of an ethically conserving lifestyle by encouraging purchasing decisions that will cost more money in the long run."

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. 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 lifestyle 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. In these submetered buildings, residents pay for their direct usage and do not foot the bill for the "tapeworm" appetites 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,

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preparing income tax returns, giving piano lessons, writing freelance, 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 "surplused" 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.

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 master-metered 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 require 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.

Conclusion

Scientists suggest that trends in evolution do not occur gradually or evenly. Rather, they occur in bursts over a short-time span. It is hypothesized that such punctuated change is about to explode electric usage and costs in master-metered buildings. Submetering will not only protect existing residents from high "new resident" consumption, but also from structurally sustained unfair practices that shareholders unconsciously inflict upon each other.

With a rational submetering program, cooperatives can have their cake and eat it too. Sound too good to be true? It emphatically is not. Through submetering, shareholders can continue to enjoy the discounts of bulk-purchased electricity while paying for exactly what they use. Nothing more and nothing less.

Afterword

Submetering, of course, is not the only path to energy savings. There are major changes on the horizon that will impact the way in which we purchase electricity and how much we pay for it. State and local governments are reviewing the monopolies that utilities now hold over service territories and are

examining ways to produce and distribute power more cheaply. Many state public utility commissions, including New York's, are adopting retail access regulations to allow competition among service providers, similar to what now exists with long distance telephone carriers. Middlemen, or "power marketers," could then package electric power from electric suppliers throughout the country to provide power directly to consumers at the lowest available cost, in direct competition with current utility monopolies.

Similarly, the federal government now allows utility companies to purchase power from other utilities where surplus power is available. Cooperatives with an understanding of electric costs will be best able to work within the new competitive marketplace to negotiate services at competitive prices.

"The trend toward self-employment . . . will require more abundant electricity to power those working at home."

Furthermore, while competition builds in the field, advances have been steady over the past 20 years in small electric power production and its storage, and experts predict significant breakthroughs on the horizon. The use of renewable energy sources such as wind power and photovoltaic electricity is burgeoning in remote and sparsely populated locations with an abundance of wind or sunlight, and the processes are becoming more cost effective each day. Corporations are hard at work to lower the cost of generating and storing electricity through innovations such as fuel cells and flywheels. If financing and/or institutional incentives can be found, cooperative corporations may also decide to explore renewable and alternate generating and storage systems.

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.

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The second important trend in the multi-unit building environment is a growing number of people working at home in limited-equity and master-metered buildings. In the past, individuals have used their apartments to "sublet" from their regular jobs.

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providing income tax credits, giving good lessons, writing feedback, and understanding a host of other trends and commercial endeavors. Today, several factors have influenced them to work at home on a full-time basis. Corporate downsizing has forced many "surplus" employees to investigate self-employment. As two-income families proliferate, more women are juggling families with careers at home. Commuters' schedules and computer technology have made it possible to telecommute. As babies enter the middle-age, there are simply more people willing and able to launch a business of their own.

The 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), reports agree that the growth rate for home businesses is approaching 20 percent per year.

Undoubtedly, a key impediment to working at home is low overhead. Reducing the many benefits and contributions of home businesses, it also should be noted that the self-employed who live in master-metered buildings are building their businesses with the help of their unmeting neighbors. Essential

office equipment such as computers, printers, fax machines and answering machines consume half electricity which now represents in a master-metered setting for the many hours of calls-in, conditioning and lighting involved in turning a home office, along with greater use of appliances such as microwaves and refrigerators. The trend toward self-employment will grow steadily. It will require more abundant electricity to power those working at home — whether residents of master-metered cooperatives or apartment co-ops. Of course, the self-employed in submetered units will pay for their electric use, whereas all shareholders in master-metered buildings will ultimately pay without choice, share the expense of their neighbors' businesses.

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Scientists suggest that trends in evolution do not occur gradually or evenly. Rather, they occur in bursts over a short-time span. It is hypothesized that such punctuated change is about to erupt electric usage and costs in master-metered buildings. Submetering will not only protect existing residents from high "new resident" consumption but also from continually sustained unit practices that shareholders unconsciously inflict upon each other.

With a national submetering program, cooperatives can have their cake and eat it too. Sound too good to be true? It emphatically is not. Through submetering, shareholders can continue to enjoy the discounts of bulk-purchased electricity while paying for exactly what they use. Nothing more and nothing less.

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