

# Mt. Pleasant Solar Coop

We are an association of 50-plus homes in the Mt. Pleasant community of the District of Columbia. We are committed to deploying solar systems on each of our respective homes. The systems we propose to install range in capacity from 2 to 3 KWs, enough on average to power 30% of our annual electric needs. Our membership is inclusive, running the gamut of age, income and ethnicity. In this respect we are representative of the city as a whole. Our aim is to reach out to all our neighbors in Mt. Pleasant. At the very least, with the right incentives, we anticipate being able to have solar installed on 100 homes in our community in short order. Concerns about the environment, potential power shortages in the near future, and escalating electricity prices are driving us to install solar. In so doing, we believe we are acting in the same spirit that motivated the City Council to create solar incentives in the first place.

## **The Current Solar Incentive Program in DC Has Failed**

The two elements of the solar incentive program currently in place in DC consist of a grant program and a renewable portfolio standard that may be satisfied by renewable energy credits (RECs). While well motivated, the incentives, as currently configured, have failed to stimulate a robust market for solar in the District of Columbia. The solar market in the District is moribund. Indeed, our members, despite their strong desire to install solar, have determined, after reviewing the incentives that they are insufficient to support the necessary investment.

The existing grant program promised rebates up to 50% of the total cost for installing a solar system. However, in practice the program has been plagued by a cumbersome application process, ambiguous evaluation criteria, and most significant of all a woeful lack of funds.

RECs are significant because we could, in theory, sell them to Pepco and other load serving entities (LSEs), using the receipts from those sales to partially offset our costs for installing the solar systems. Unfortunately, the REC market in the District has no buyers. Worse than the failings of the grant program, the REC market simply does not exist to any practicable degree.

Recently new leadership has assumed control at the DDOE, the administrator of the grant program. As we understand it, they are intent on streamlining and clarifying the process, and are aggressively seeking funding from a variety of sources. While these developments give us hope, the availability of funds in sufficient amounts this year and in the coming years to support not only our community's efforts but also solar installations throughout the city remains problematic. This funding uncertainty makes us extremely uneasy about relying exclusively on the grant program as the main stimulus to our projects and other projects like ours. Moreover, grants alone are unlikely to produce sustained solar development at levels that will have a material impact on the environment or our electricity reliability.

The REC market, operating in conjunction with a properly functioning grant program, could provide sufficient incentives. However, the currently applicable Alternative Compliance Price (ACP) of \$300/Mwh, has not created the expected REC market. The two linchpins of the provisional REC market, the ACP and the percentage requirements stipulated under the

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renewable portfolio standard (RPS), in combination imply a transaction activity too small to interest the major prospective buyers of RECs, the load serving entities (LSEs) such as Pepco. Unless increased by the pending Clean and Affordable Energy Act of 2007, the proposed RPS requirement in 2008 translates into a mere 1,226 Mwhs from solar.

Given the high transaction costs relative to size of transaction, Pepco is better off paying the penalty (based on the current ACP) of approximately \$367,719 – a trifling 0.15% of their \$248.3 million net income in 2006 – rather than trying to secure RECs from a large group of small, residential installations. In other words, without an increase in the RPS *and* ACP the REC market will continue to be moribund and irrelevant for small solar projects like those we plan for Mt. Pleasant.

## **Our Recommendations for Reviving the Solar Incentive Program**

### ***The Grant Program***

For these reasons we strongly encourage the City Council to rebuild the two pillars of the existing solar incentive program, the grant program and the RPS-dependent REC market. We heartily support the efforts at DDOE to streamline and make more transparent the grant program's application and evaluation processes. The only recommendation we would make about the program is that the Council allocate sufficient funds (\$2 million – enough roughly for 50% of the capital cost of installing 2 KWs each on 200 homes, 400 KWs in total – would be a good start) in addition to those supplemental funds already being sought by DDOE to make grants a reliable and sufficient incentive.

### ***The REC Market***

The issues for the REC market are more challenging, but offer greater opportunity for long-term success. As we mentioned, the market as defined jointly by the RPS and ACP is simply too small to be active. We recommend that the City Council significantly increase both the ACP and the RPS percentages. As a first measure, we recommend that the ACP be raised to \$800/Mwh and the RPS percentages be raised to correspond to those used in New Jersey (schedule attached). These two steps 1) will create sufficient incentive for buyers to enter the REC market and thereby stimulate the corresponding entry of suppliers (*e.g.*, homeowners with solar systems), and 2) will provide sufficient incentive as a stand alone proposition so that development of solar will not be dependant on the continued robustness of the grant program.

Our economic models, based on input from qualified prospective solar system owners, (our membership) indicate that an ACP of roughly \$800/Mwh on its own would be sufficient to prompt most of our members, and presumably others like them throughout the city, to install solar systems on their homes. It should be understood that the ACP represents merely a “ceiling” for the price of RECs; it does not set the price of RECs. Allowing for the REC buyers' transaction costs, LSEs with RPS obligations would be better off purchasing RECs rather than

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paying the non-compliance penalty *only* if RECs traded below the ACP. Market dynamics will determine how much below the ACP RECs actually trade.

In light of this dynamic, it is reasonable to expect that as the grant program emerges as a viable incentive, the equilibrium price of RECs will fall correspondingly. A REC seller's willingness to sell will be a function of the total amount of incentive he or she requires to make purchasing the solar system economically feasible. The more funds the homeowner can access through the grant program the less he or she will need from selling RECs. Consequently a solar energy provider will be willing to sell RECs for less, thus driving down the equilibrium price of RECs.

This reciprocating adjustment of the REC market to the availability of grant funds belies the notion that reinvigorating the REC market results in a corresponding increase in the total amount of incentives that will be paid. In actuality, a vital REC market represents a hedge against the grant program failing to spark enough investment in solar.

Of course, DC is home to a diverse population with broadly varying incomes, and correspondingly varied threshold requirements. The point is simply that the ACP must be set high enough both to 1) create the necessary incentive for load serving entities such as Pepco to want to buy RECs and 2) induce sufficient numbers of homeowners to deploy solar on their homes. Admittedly, setting precisely the "right" ACP level is conceptually challenging. Nonetheless, our members, having "crunched the numbers," have come up with at least part of the answer. Allowing 20% for transactions costs, the ACP necessary to spur widespread investment in solar by the Mt. Pleasant Solar Cooperative Association is \$800/Mwh.

## ***REC Allocations for Small Installations***

Another issue for the REC market is the difference in costs for larger installations (100 KWs and above) versus smaller installations (20 KWs and below). The total installed cost of larger systems is approximately half that of smaller systems on a per KW basis. This difference creates difficulties for a large, active REC market because RECs from larger installations require lower incentives to cover their costs and could drive RECs from smaller installations out of the market. Based on experiences in other markets – most notably the incipient market just next door in Maryland – companies focused on large-scale commercial installations, with lower incentive requirements and correspondingly larger quantities of RECs, could drive smaller installations, most notably homeowners, out of the market. To forestall this eventuality, we strongly recommend that the City Council mandate that a significant portion (at least 30%) of the RECs purchased by load serving entities come from smaller installations (20 KWs or less).

## ***Impact on Ratepayers***

There are obvious concerns about how the incentives package may affect ratepayers. Some have argued that the incentives program imposes an undue burden on ratepayers. That concern may not recognize the full benefits of an aggressive solar program. First, solar incentives will

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contribute to greater electric reliability. Just next door in Maryland the alarm has been raised already about impending electric power shortages. The state and the regional system operator, PJM, project that unless additional transmission and generating capacity is brought online shortages will ensue. Specifically, they see a need for an additional 1,500 MWs in this area by 2012. As DC is located in the same FERC-designated critical corridor as Maryland, the city presumably faces a similar risk of shortages.

Solar installations can help address this concern. According to a study frequently cited in the industry, Maryland has technical potential solar capacity in excess of 17,000 MWs and DC has about 1,900 MWs of potential solar capacity (of which 958 MWs is located on residences). To put those numbers in perspective, that is the equivalent of three large generation plants located within the District. This potential solar capacity in Maryland and DC could forestall the anticipated shortages and the need to build new transmission and generation.

Second, this region is highly dependent on natural gas-fired generation facilities, and the high price of fossil fuels has driven up the cost of electric energy. That trend is likely to continue unless steps are taken to provide alternative resources. A substantial influx of solar generation will effectively compete with new gas-fired generation and that competition will help dampen electricity price increases for everyone, even those that do not install their own solar panels.

Against this backdrop, solar represents an opportunity to add critically needed new generating capacity and to provide competition for fossil-fueled generation. Taking into account the projected trajectory of fossil fuel prices over the next 25-30 years (the life expectancy of a solar system) and the line losses in transmission and distribution that will be avoided by generation located at each person's home, solar is more cost effective on a life-cycle basis than, for example, the gas-fired power station Pepco just announced it is building in Pennsylvania.

Moreover, as the incentives proposed here will not cover 100% of a solar system's total installed cost, solar system owners will be tapping into their own capital for a substantial portion of the required funds. The homeowners in Mt. Pleasant certainly will be. In effect, those citizens that deploy solar systems will be using their own capital to help put in place electric-generating capacity desperately needed by the City as a whole. The incentives to support a viable solar alternative are an investment in a reliable, more cost-effective energy future, not a handout.

Additional capacity is needed for the District of Columbia. The ratepayers will have to pay for this additional capacity. Solar is less costly on a life-cycle basis than the fossil fuel alternatives. To the extent that homeowners take advantage of the incentives to install solar, ratepayers will actually be leveraging the capital of those homeowners to add the needed additional capacity. Overall it would be quite reasonable to argue that a revitalized incentive program represents the least cost option for a required augmenting of our power supply. Quite to the contrary of being an undue burden, the incentives would appear to be a boon to ratepayers.

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## **Conclusion: We Need Your Help**

The Mt. Pleasant Solar Co-op Association continues to enroll new members, all determined to install solar systems on their homes, if it could be made more cost effective to do so. We are not solar installers or lobbyists, but rather regular citizens who are trying to do the right thing for our community, and are actually trying to do what the District has implicitly asked us to do when it created the solar incentive program in the first place. We are offering specific recommendations designed, not to enrich ourselves financially, but to make installing a solar system cost effective – having looked into our pocketbooks, we know what we can and cannot afford.

We are the people you asked to install solar systems on their homes. We are ready to answer the call, but we need your help. We respectfully and urgently appeal to you to make the changes necessary to make solar affordable:

- Fund the grant program sufficiently to make solar systems affordable for a meaningful number of home owners,
- Raise the ACP to at least \$800/Mwh,
- Increase the RPS percentages for solar to at least those adopted for in New Jersey, and
- Require LSEs like Pepco to purchase a significant percentage of the RECs from small system owners.