ORIGINAL

OPEN MEETING AGENDA ITEM

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**BEFORE THE ARIZONA CORPORATION COMMISSION**

Bob Stump, Chairman
Brenda Burns, Commissioner
Susan Bitter Smith, Commissioner
Gary Pierce, Commissioner
Robert L. Burns, Commissioner

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|---|---|
| IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR APPROVAL OF NET METERING COST SHIFT SOLUTION | Docket No. E-01345A-13-0248 |

**PROTEST OF C. F. MCERLEAN, JR.**

Pursuant to A.A.C. R14-3- 106, I hereby protest the Application of Arizona Public Service Company (APS) for Approval of Net Metering Cost Shift Solutions, filed with the Arizona Corporation Commission (Commission) on July 12, 2013 (Application).

**STANDING**

I am a homeowner with a rooftop solar system at my residence that is expected to cover about 46% of my annual needs based on 2012 experience. Thus, I am an APS customer for 54% of my needs paying the full range of billing elements that provide APS cost recovery. I would be significantly harmed by APS's proposal to terminate grandfathering on the sale of my home.

In addition, I have prospective interests as we have been considering solar on my daughter's residence. However, the latter project is economically marginal and the proposed tariff would adversely affect our ability to adopt solar there. While I desire to participate in the goals of clean energy and do not look at solar solely as an investment, given the substantial size of the expenditure, like many others, I cannot, at my age with a fixed income, undertake a project that could result in a loss as compared to other investment alternatives.

## SUMMARY

Net metering does not "shift costs." It is merely a means of recording sale and credit for solar customer energy sales to service area users through APS as agent or partner. Service area capacity management *(generation, transmission, etc.)* and uncompensated use of the grid (Grid Support) are the financial issues which need to be addressed. Additionally, significant legal issues concerning contracts, protected rights, and tariff discrimination are presented by the proposal that must be resolved.

## DISCUSSION

### A. Background and General Principles

#### 1. Public Interest

There are societal benefits in energy independence, conservation of natural resources, and clean energy. There is also benefit to ratepayers in flattening or lowering the curve of long term utility costs. Accordingly, the Federal and Arizona governments and the Commission have found that use of solar energy is in the public interest. They have taken a variety of steps to encourage its use by providing monetary incentives and devising programs to induce private individuals to participate and make the necessary substantial expenditures and commitments to long term contract obligations in order to install solar generators.

#### 2. Considerations For Solar Entry

A homeowner desiring to engage in rooftop solar may purchase it out right with or without financing, enter a prepaid equipment lease, or undertake the long term liability of an installment payment equipment lease. In each case, the homeowner is making an investment decision, a choice between alternative investments. In each case, recoupment of principal and a reasonable rate of return considering the risk level of each alternative are keys to the choice. In the case of ownership, obsolescence and casualty loss risks and maintenance costs are involved. In the case of loans and installment leases, certainty in the ability to make payments to lenders and lessors from the energy cost savings is key. Further, solar is an illiquid investment, and a significant, reliable rate of return is needed to induce selection of solar over liquid investment alternatives. As well, inducements are needed to overcome non-financial impediments to adoption such as inducements to encourage participants to beautify their homes and businesses with the equipment.

**3. Protected Rights**

The purchased equipment and prepaid leases are each a valuable asset in which APS's solar customers have invested considerable funds. They are property rights which are protected by our Constitutions and laws and cannot be taken or diminished without due process and just compensation. Installment leases and loans are obligations of contract which are likewise protected.

**4. Tariff Changes**

While tariffs, normally, are not guaranteed and, as an executory contract, can be changed for future application, the situation at hand presents the special case in which changes are restricted. Where rights and obligations have been created as a result of, and in reliance on, the inducements and incentives embodied in the Commission's policies and APS's tariffs. By installing a rooftop solar generating system, the solar customer has performed his or her part of the bargain, and the contract is binding. As a result there are limitations on the scope of what can be changed for existing solar customers.

**5. Interconnection and Cost Allocation**

This case can be seen as simply about interconnection and associated capacity and costs issues. The issues appear not unlike those that arose in the late 1960s and early 70s with the rise if inter-city microwave companies. They were competing with AT&T's long lines services but needed to connect to local telephone facilities, such as AT&T's Bell Telephone system, and to use long lines services for beyond traffic and backup. The problems were solved and the FCC ordered the interconnection.

The cost issues raised by APS are implicit in the Commission's solar policy and, judging from comment in the APS application, were recognized at the time the policy was established. Thus, the cost allocations were found to be in the public interest and justified at least to the extent employed on a reasonable scale. The public typically participates in the cost of public interest projects. However, as argued by APS, the policy may have worked better and faster than expected and, if the reasonableness standard is about to be broached, may need to be revisited and refined. Implicit in this assessment is the question of whether the current rate of rooftop solar adoption will continue.

### 6. The Relationship

The relationship between APS and its solar customers is key to analysis of the cost issues and the definition of solutions. Are solar customers competitors? Can they viewed as comparable to utilities outside APS's service area that sell excess production to APS at marginal rates? Can they be viewed as comparable to private power companies that have economies of scale and are in business of making and selling power? Are they partners with APS serving the APS service area? The lack of an answer makes it difficult to parse the issues raised here. An answer will determine how to handle capacity and Grid Support costs and the crediting of solar customers for energy they put on the grid.

## B. Existing Solar Installations - Grandfathering.

APS may have proposed grandfathering because of concern for the legal ramifications of asset and contract impairment and the taking that would be experienced by its solar customers, but it did not discuss the issue in its Application. Had it covered the issue, it would have recognized an inconsistency. Terminating the grandfathered right when the residence is sold is also a breach, an impairment of contract, a substantial curtailment of the value of the property rights and an uncompensated taking by APS which the Commission cannot allow.

What caused APS to overlooked the point?

## C. Future Solar Installations

### 1. Net Metering

Net metering does not shift costs, and APS's claims confuse the issues. In essence, the solar customer passes excess generation from the rooftop system to APS for sale to other APS grid users. APS sells it on behalf of the solar customer at retail rates and passes that revenue back to the solar customer through an offset credit. Because APS retains the revenue, the solar customer is paying the full retail rate for the energy that is being offset.

The above is a simple to understand description of the relationship and is implicit in the Commission's solar policy program which views rooftop solar as part of APS's required solar production capacity. It demonstrates that net metering is not relevant to the analysis of what is a fair and reasonable resolution of APS's cost issues. The latter are independent of the metering.

There may be an administrative cost *(apart from the Grid Support cost APS identifies)* that APS can demonstrate and that can be considered, but paying solar customers with incremental cost based rates is confiscatory and not necessary to resolve the issues presented by APS.

The fact that APS has sources from which it can purchase energy at prices lower than the amounts being credited to the solar customer is not relevant. APS loses sight of the relationship. It forgets that it is using its solar customers to meet its own solar production obligations. *(Thus, APS's "battery" analogy also does not fit the reality and is not helpful in defining the issues and solutions.)*

**2. Customer and APS Interests**

APS's interests are relevant in this matter to understand, interpret and evaluate its testimony and the appropriateness of its proposals. They should be identified if the Commission is to achieve appropriate solutions for all concerned.

**(a) Customer Interests**

APS's Application attempts to make non-solar customer interests the central issue rather than its own interests. The Application is cast in a tone of selfless interest in the welfare of its non-solar customers. It frequently uses the term "unfair". At page 10, it says, "It would be irresponsible for APS to stay silent as the magnitude of this cost shift and resulting consequence to customers grows." At pages 1 and 2 of Mr. Meissner's testimony, he says; "In my Direct Testimony,... I emphasize that concern over the cost shift is about customer fairness and the rate increases that the cost shift will cause." All of this is emotional language tending to direct attention away from APS and gain support for APS from a segment of its ratepayers.

However, I think it doubtful that APS's real interests are for customer well being. When it comes to its solar customers, self interest shines through as evidenced by:

(i) its disregard for the investments of its solar customer *(their fixed costs so to speak)* and

(ii) its insistence on taking the solar customer's energy *(sold to other grid customers at retail rates)* at a price based on the marginal costs of a public service company rather than a price based on the solar customer's costs.

Overall the Application leaves the reader with the sense APS is suggesting that its solar customers are unsavory people who are taking unfair advantage of APS and others.

In reality, the interests of APS and its customers diverge and are often likely to be in conflict.

**(b) APS Interests**

Utility rates are designed to cover the utility's costs and provide a reasonable rate of return. Thus, as a business, cost allocation among its customer base is not its concern unless it affects APS's business interests, e.g. by having a negative impact on demand.

When new rooftop solar installations go on line, a bit of APS's capacity is idled and related costs temporarily cease to be covered because (i) solar customer usage of APS power drops and (ii) other customers are using solar customer excess production rather than APS production. If APS were adding new, non-solar customers at the same rate, the released capacity would be used, and we would not be having this conversation. The focus would be on APS's long term growth, a significant interest of APS and its owners and lenders.

To express the problem from another perspective, rooftop solar is creating new capacity in APS's service area just as would occur if APS added a new generator. The difference, APS does not have control over the pace of introduction of the new capacity and its rate schedules are not adapted to it. This explanation also highlights that there are two distinct categories of cost at issue here: (i) capacity costs *(which are incurred by both APS and the solar customer)* and (ii) Grid Support costs.

APS says that in the last two years the rate of new rooftop solar additions has rapidly increased. As a result, a significant gap between the "relinquished demand" and the "new demand" curves has occurred. However, because there is a finite amount of homeowner capital and a limited number of rooftops with orientations that make the installation economically feasible, it is reasonable to expect that over time the gap will close. Additionally, retirement of old APS facilities and deferral of new as a result of changed demand will hasten the closing of the gap. The latter, of course, is the normal way excess capacity is managed and is the responsibility of APS. Meanwhile, APS has the problem of covering the costs that it is currently absorbing. This too is a significant APS interest.

If I understand APS's testimony correctly, costs generally will not be allocated in the rate structure *(applicable to both solar and non-solar users of APS power)* until the next general rate case which would conclude at the earliest in July 2016. However, there are no guarantees. Costs to be allocated must be shown to be reasonable and unavoidable. For example, if APS failed to anticipate and properly manage the excess capacity problem knowing since 2007 that it could occur, perhaps some of the costs should be absorbed by APS's owners who put management in

place, not the ratepayers. This means that APS is not only currently absorbing costs, but there is a risk that some costs might not be shifted to its customer base requiring APS to take some other action to reduce capacity. Both are legitimate business interests.

Finally, notwithstanding that the Commission's solar policies implicitly make solar customers a part of APS's generating system, partnering to supply some of the solar generating requirements imposed on APS, APS's Application treats solar customers as independent producers and competitors. Viewed as a growing group of competitors, APS would have concerns about a negative impact on its business model and its long term growth curve. Again, legitimate interests of APS and its owners and lenders.

I did not see any specific discussion of these business interests in APS's Application. They should be aired in a hearing.

**3. Cost Recovery Issues**

APS wishes to impose the demand charge under Rate Schedule RCT-2 to deal with its problems. It does not detail what is included in the demand charge, but concedes that it is an imperfect solution, App. p. 13. In addition, Mr. Miessner says the demand charge would be about 90% of the demand rate paid by a non-solar customer, see Exhibit 3, Attachment CAM 3, page 9.

I was on the ECT-2 rate schedule prior to my switch to solar so I could use my 2012 experience to compute the savings from using solar under the proposed ECT-2 rate schedule. I determined the impact it would have on an $8,500 investment in a prepaid 20 year solar lease that would replace 46% of my 2012 energy consumption. Using an assumed average annual 2% APS rate increase, a conservative 5% rate of return based on liquid investment alternatives, applicable income tax rates, and Mr. Miessner's conclusion that the demand charge kilowatts under solar will be 90% of my non-solar experience in 2012, I found that it would take more than the 20 year lease term to reach break even. Larger systems would have a greater problem, and owned systems have other costs that need to be recovered. I expect solar lessors would identify additional problems.

I sense that the charge incorporates much more than costs of the solar customer Grid Support APS identified and, thus, would not be appropriate. See Attachment 1 hereto which compares energy usage by non-solar and solar customers using the Figure 2 graph in APS's Application, p. 6. It shows solar customers have a much lower, and a significantly skewed, demand on the APS system further indicating the proposed ECT-2 demand charge is not suitable. *(Shading was*

*added to enhance the comparison.) (Note that APS does not indicate which month its Figure 2 graph represents or explain how it varies during the year.)*

The current demand charge applies in the context of a significant, continuous usage of APS facilities over each day of the month. Its use for solar customers is inequitable because of randomness in the setting of peak KW and the skewing in the solar use situation. In the case of solar, it will produce an unrepresentative peak for the month if there is one cloudy day. At other times it will be measured in the last 2 or 3 hours of the day when solar installations are producing little or no energy and will not be representative of the cost of the solar customer's overall usage of the APS system.

Rooftop systems are generating power for the APS service area. The cost of providing this equipment is a capacity cost of the service area and should be taken into account in any solution relating to allocation of capacity costs that concern APS. Solar customers are already paying capacity costs by providing the solar generator. Adjustment of capacity is in the hands of APS. The legitimate area of inquiry with respect to solar customers is Grid Support costs.

Short handing is not acceptable in a matter as serious as this. APS should provide cost numbers specific to the areas it identified:

(i) grid usage for export energy,

(ii) access to energy beyond the rooftop system's capability, including backup power, and

(iii) voltage and VAR support.

From those costs it should devise a charge or charges specific to them. The charges must fairly allocate the burden among solar customers taking into consideration that systems have different generating capacities based on size and different peak times based on their orientation.

Once these costs are determined, the results of the Technical Conference, the Cross Border and SAIC studies, and public interest goals become relevant to determining allocation.

**4. Incentives**

APS wants to eliminate any on-going incentivization through the rate schedule and use only up-front cash incentives.

Up front incentives affect the entry cost, i.e. they reduce the initial investment amount to make it reachable by homeowners. Ongoing incentives *(monthly bill savings)* provide recovery of that initial investment amount and the needed return on investment. There is an interrelationship. The lower the initial cost, the lower the requirement for savings to recoup the

investment and obtain a return. However, as long as there is an investment there is a need for the on-going savings incentive to make the investment work. Additionally, it is better to spread some of the incentive costs over the time the public interest benefits are being realized rather than pay up front lump sums. On-going incentives work to prevent the solar customer from walking away before the expected public benefits are realized.

**5. Compensating Solar Customers For Excess Production Sent To The Grid**

Mr. Meissner at p. 10 of his testimony says "Compensation for rooftop solar should never be higher...than the price to purchase an equivalent, or near equivalent, alternative."

APS does not point to any authority for its "should never" rule. Correctly written it should state "It would be extremely beneficial to APS if...."

Public service power companies have their fixed costs, variable costs for service area consumed power, and a reasonable rate of return covered by the ratepayers in their service area. To the extent they generate excess power, essentially it is sold outside the ratepayer base at a price covering incremental costs plus a reasonable rate of return. As a pricing constraint, if it is sold for more than that, the service area ratepayers are entitled to the benefit of that value.

In the case of private power companies, they have to price their product to cover their fixed and variable costs and return on investment. Economies of scale allow them to produce at lower costs than rooftop solar.

Rooftop solar customers on the one hand and public service companies or private producers on the other are not similarly situated. Rooftop solar customers do not have a compensating service area or economies of scale. The solar customer installed a rooftop system at the invitation of the Commission and APS to handle his or her energy expenses, not to be a power company.

**6. Year End Clearing of Credit Balances**

APS by paying a marginal rate on solar customer year end energy balances that have previously been sold at retail rates is taking something of value for its private use and profit. It is disregarding the solar customer's "fixed costs" while vigorously defending its right to recover its own fixed costs. That approach may have been a reasonable accommodation in the context of the overall incentives provided by the Commission and APS when the program was set up, but, now that APS wants to take a sharp pencil to its side of the equation, it is necessary to do likewise on the solar customer's side of the equation.

The availability of other sources is not relevant to rooftop solar. Sale of excess rooftop solar generation to APS service area power consumers is a part of the structure set up to carry out the solar policy found by the Commission to be in the public interest. There may, however, be a possible exception where the solar customer's production exceeds 100% of the solar customer's own energy consumption.

**7. Bill Credit Alternative**

Proposed EPR-7 says "The generation facility shall be configured such that the total generation output shall be credited by APS at the relevant credit rate; the generation facility shall not serve the customer's electrical usage at any point in time or be netted against metered energy purchases from APS."

In its Application, p. 13, APS says that under the bill credit option it would compensate rooftop solar customers through a bill credit for "all of the power produced by their rooftop systems," that the credit would be based on the forward market at Palo Verde, and that "This price would send a more accurate price signal for the true cost of the electrical services provided to potential rooftop solar customers."

This option provides an annual benefit which is only 54% of the benefit I would receive under the proposed ECT-2 net metering option. The latter was not economically feasible and the bill credit option is out of the question.

It seems that APS needs to receive a signal. A signal about the solar customer's true costs. However, APS most likely knows about those costs and is not concerned. Concern is not compatible with its interests and apparent agenda on rooftop solar. It makes no effort that I could find to take customer costs into account.

Further, APS expressed concern over its ability to explain to customers particular rate plan solutions it had considered and abandoned. I cannot imagine how it thinks it can satisfactorily explain to a solar customer that after spending thousands of dollars, the customer cannot keep or use the power the customer is generating with his or her own equipment and that the customer will be compensated for the taking at significantly less than it cost the customer to generate the power.

**8. Business Solar Exemption**

Currently residential and business solar are under the same net metering rules. APS wants to make its proposed changes applicable only to residential solar. This disparate treatment

introduces the issue of permissibility under the anti-discrimination and preference prohibitions of Arizona Revised Statutes, Section 40-203. I believe the issue should be addressed, but I could not find any discussion in the APS Application.

**9. APS's Solution Design Goals**

In its Application, p. 11, APS says:

"In developing the solution, APS was guided by four key principles:

(i) Ensure fairness in addressing the cost shift;

(ii) Make transparent any incentives underlying the installation of rooftop solar;

(iii) Minimize costs to customers; and

(iv) Craft a solution that will be robust and adaptable over the long term."

Did it achieve those goals? No. With respect to clause:

(i) to the extent the demand charge exceeds the cost of the solar customer's use of the APS facilities, it shifts costs from non-solar customers to solar customers. Taking a solar customer's energy at less than cost shifts APS's costs to solar customers.

(ii) There are no hidden incentives today. There are upfront cash credits and bill savings. Essentially, all APS has proposed is elimination of the necessary bill savings incentive which would make rooftop solar uneconomic.

(iii) Failure to take into account the solar customer's costs in its proposals increases that customer's costs. What APS would do is minimize its own costs by grabbing solar customer generated energy at less than cost.

(iv) This clause is just rhetoric.

At page 2 of its Application APS says:

"APS has been seeking stakeholder input to understand the issue from all perspectives and develop a fair solution that can be implemented now, in a way that preserves the opportunity for customers to install solar."

Unfortunately, its solution does not do so. While the right to install rooftop solar is preserved, the practical opportunity would be gone because it would no longer be economically feasible.

**D. Staff Memorandum and Proposed Order**

**1. Grandfathering and APS Rate Options**

I agree with, and urge adoption of, the Staff position on grandfathering and their rejection of the APS rate options for the reasons set forth above.

**2. Alternative Recommendations**

I did not see anything in the Staff memorandum that evaluated the impact of their alternative recommendations on solar customer cost recovery. While it does not appear that their LFCR Flat Charge proposal would have a major impact on my economics, I cannot tell whether it includes more than the Grid Support costs. The DG Premium raises the issue of taking solar customer energy at less than cost, and its economic impact is worse than APS's demand charge proposal. Finally, it is hard to imagine anyone would invest thousands of dollars in solar in the face of the uncertainty conveyed in the Staff's proposed notice document.

**CONCLUSIONS AND PETITIONS**

(a) I would be financially harmed by the APS proposal to end the grandfather right upon sale of my home. I am age 75, and sale is highly likely before my 20 year lease term expires.

(b) I could not invest in another rooftop system at my daughter's house under the proposed tariffs as my numbers tell me I would suffer a loss. Accordingly, the proposal as it stands is a rooftop solar killer for me.

(c) APS has not been candid about its own business interests. Examination of these interests is essential in order to find a proper solution for all concerned.

(d) The above material describes very basic regulatory, business and economic concepts. It is not likely that APS is oblivious to them. Accordingly, the perception is that APS's proposal reflects a rejection of the public interest goals established by the Federal and Arizona governments and the Commission in favor of its self interests. Actions speak louder than words. Its proposed tariffs make rooftop solar uneconomic and, thus, it seems to be saying we want out, here are our interconnection requirements, and the rest of you do whatever you want.

(e) If the Commission intends to continue its solar policy:

(i) In making adjustments, the Commission and APS need to respect the rights and obligations of the solar customers.

(ii) The Commission should define, and assure consistent application of, the involved party relationship - partners or competitors - while preserving a policy it established to further the public interest.

(iii) The Commission needs to answer the question whether the financial needs of private solar can be made compatible with the financial needs of the public service company under an adjusted business model while retaining reasonable rates and rules for all ratepayers.

(f) Because this is a significant matter with far reaching consequences and there are a number of factual issues and divergent claims that need to be explored, an evidentiary hearing that permits cross examination should be held. Expedited treatment would not be appropriate under these circumstances.

(g) The Commission should appoint, from its staff or otherwise, legal representation and expert support to participate in the proceedings on behalf of existing rooftop solar customers to assure the interests of solar customers are heard and protected.

This protest is filed to provide input from the perspective of a customer. For the record, I am a retired attorney that worked for a company that was at one time subject to economic regulation.

Respectfully submitted.

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An original and thirteen copies of the foregoing were filed on October 24, 2013 with:

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I hereby certify that on October 24, 2013, I served this document by mailing a copy thereof, properly addressed, first class postage prepaid, to the parties shown on the attached list.

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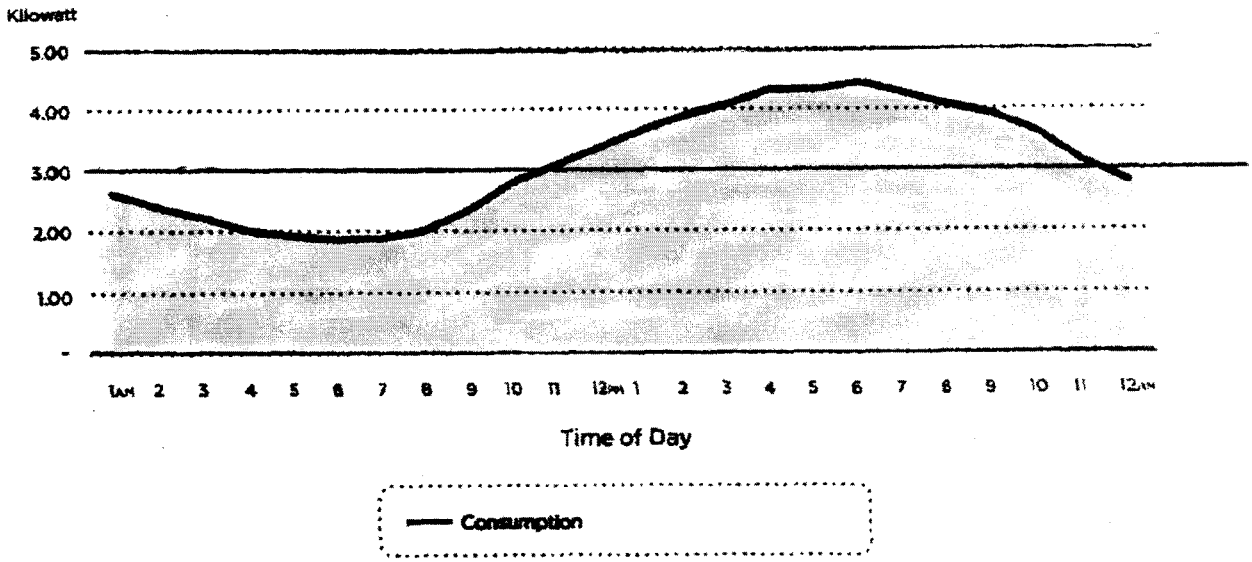
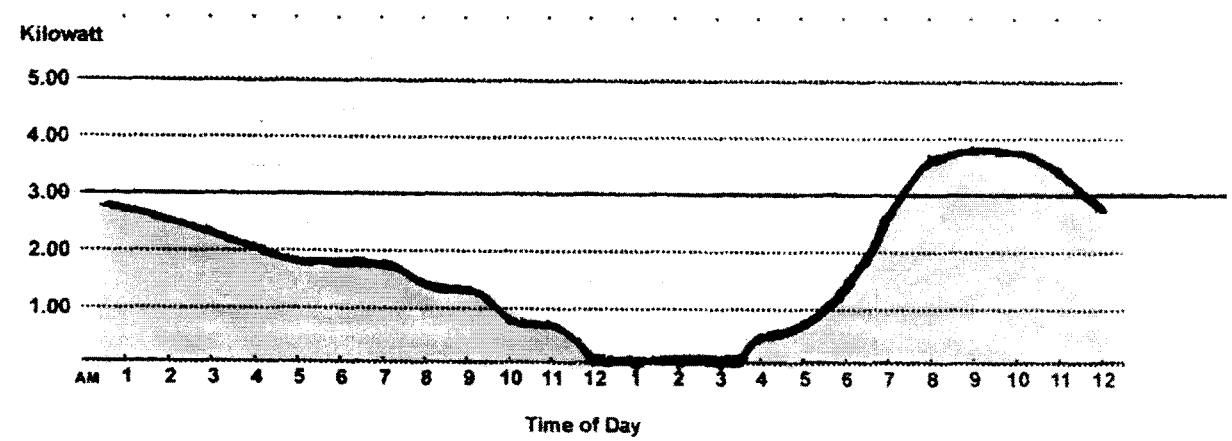
## Typical APS Non-Solar Customer Usage

*(Figure 1 of APS's Application, page 5)*




## Typical APS Solar Customer Usage




Based on Figure 2 of APS's Application, page 6. The solar supply curve is netted against APS's nonsolar supply curve.

*(Differences visually estimated from APS's Figure 2)*