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| PA Public Utility Commission |
| The Act 129 Fuel Switching Working Group  Staff Report |
| Docket No. M-00051865 |
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| **April 30, 2010** |

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# Background

Act 129 of 2008 (Act 129) was signed into law on October 15, 2008, setting forth goals for reducing energy consumption and demand. Among other things, Act 129 amended the Public Utility Code to require the implementation of Energy Efficiency and Conservation (EE&C) plans by affected electric distribution companies (EDCs), after review and approval by the Public Utility Commission (Commission).

The Fuel Switching Working Group (FSWG or Working Group) was initiated by the Commission in June 2009 in the *Implementation of the Alternative Energy Portfolio Standards Act of 2004: Standards for the Participation of Demand Side Management Resources – Technical Reference Manual* (TRM) proceeding at Docket No. M‑00051856. The initial charge of the Working Group was to identify, research and address issues related to fuel switching with the possibility of the inclusion of fuel switching related deemed energy savings in future versions of the TRM. In its Orders[[1]](#footnote-1) ruling on the EDCs’ EE&C plans, the Commission directed the FSWG to provide recommendations by March 31, 2010 on whether changes to the TRM or Total Resource Cost test (TRC test) are justified. The Commission subsequently extended this due date to April 30, 2010.

# Working Group Members and Meetings

The Commission issued a [Secretarial Letter](http://www.puc.state.pa.us/electric/pdf/Act129/FSWG-SL121009.pdf) on December 10, 2010, setting an initial Working Group meeting for January 6, 2010, and setting forth questions for the Working Group to address. The Working Group met on January 6, 2010, to discuss the mission of the Working Group, the questions attached to the Secretarial Letter and other related topics raised by participants. Participants at the January 6, 2010 meeting, included representatives from EDCs, natural gas distribution companies (NGDCs), industry trade associations, consumer advocacy groups, the statutory advocates and Commission staff. At this meeting, the Working Group formed a subcommittee comprised of representatives of UGI Distribution Companies (UGI), E Cubed Company, LLC (E Cubed) and the Sustainable Energy Fund (SEF). The Working Group charged the subcommittee with providing cost-benefit analyses for various fuel switching programs. The five specific fuel switching programs analyzed were: water heating; heating and air conditioning; clothes drying; combined heat and power distributed generation; and residential micro combined heat and power.  On January 25, 2010, this subcommittee provided its analyses. These cost-benefit analyses examples are attached to this report as an appendix.

On February 16, 2010, various participants in the Fuel Switching Working Group provided comments with respect to the subcommittee’s analyses. The parties that submitted comments were West Penn Power Co. d/b/a Allegheny Power (Allegheny); Citizen Power; Columbia Gas of Pennsylvania, Inc. (Columbia Gas); Community Legal Services of Philadelphia (CLS); Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company (collectively, FirstEnergy); Keystone Energy Efficiency Alliance (KEEA); Office of Small Business Advocate (OSBA); Pennsylvania Utility Law Project (PULP). The comments are attached to this report as an appendix.

The Working Group held a meeting on Feb. 26, 2010 to discuss the work product of the subcommittee and related issues. In addition, the Working Group established a reply comment schedule and requested that EDCs and NGDCs provide additional data regarding natural gas penetration rates.

Participants submitted reply comments and the additional data requests on or before March 12, 2010. The participants that provided reply comments were Allegheny; E Cubed; FirstEnergy; Industrial Customer Groups[[2]](#footnote-2); Office of Consumer Advocate (OCA); OSBA; PPL Electric Utilities (PPL); SEF; and UGI. PECO Energy Company (PECO Energy) and UGI submitted data request responses. The submitted reply comments and data request responses are attached to this report as an appendix.

# Topics and Recommendations

As discussed above, the Working Group focused its discussion on the eight questions raised in the Secretarial Letter and a few additional issues raised during the Working Group meetings and in written comments. Staff notes that while the Working Group could not reach a true consensus on any of the topics raised, there were topics where participants could accept positions other than their preferred position. As there was no true consensus on the topics, Commission staff have outlined below, the topics raised, the positions of the participants who submitted comments on a particular topic and, where applicable, a Commission staff recommendation on the topic.

1. Are energy efficiency and conservation measures that offer incentives to customers to switch from electric heat to gas heat, or vice versa, appropriate for EDC EE&C programs?

UGI avers that the Commission should not rely on the energy efficiency program proposals of EDCs alone simply because EDCs would be subject to potential fines for non-compliance with initial goals set in Act 129. UGI believes that the Commission has a statutory obligation to consider plan improvements proposed by others and to order program improvements if the evidence indicates that alternatives are superior. UGI also notes that the Commission recognized that third parties should be provided the opportunity to suggest improvements to EDC-proposed programs. (UGI Reply Comments at 2.)

UGI and other Pennsylvania NGDCs presented detailed proposals for plan improvements during the Act 129 hearings and believe the Commission should review and act on this evidence to make improvements to EDC plans where appropriate and not expect EDCs to voluntarily adopt these programs. (UGI Reply Comments at 3.)

OCA submits that fuel switching measures and applications, in the appropriate circumstances, should be available to EDCs and their stakeholders when considering the best means of achieving energy efficiency goals. OCA submits, however, that just as no other particular energy efficiency program has been mandated for implementation, neither should the Commission mandate fuel switching programs. (OCA Reply Comments at 1.)

OCA further submits that EDCs should address fuel switching programs through its stakeholder processes along with all other programs when determining if there are improvements to their energy efficiency programs for implementation. These stakeholder processes should be inclusive and should be used to identify those situations where the use of fuel switching is appropriate, cost-effective, and in the public and consumer interest. (OCA Reply Comments at 2.) OCA notes that two EDCs, PECO Energy and PPL, included some targeted fuel switching programs within their EE&C plans that provide examples of situations where fuel switching can be used in support of energy efficiency goals. (OCA Reply Comments at 2 and 3.)

FirstEnergy asserts that the Commission should continue to direct that fuel switching programs be voluntary and not mandate the inclusion of broad‑based fuel switching programs in EE&C plans going forward. (FirstEnergy Reply Comments at 1.)

OSBA submits that to the extent the Commission permits fuel switching as an option within EE&C plans, it believes that the Commission should neither encourage nor discourage fuel switching. Instead, each specific fuel switching proposal should compete against the other potential EE&C programs considered by an EDC. The competition should be based on the TRC test result for the fuel switching proposal in comparison with the TRC test results for each of the other potential EE&C programs. OSBA supports EDC consideration of fuel switching options on a case-by-case basis, along with the other programs considered by the EDCs as part of their ongoing review of their EE&C plans. (OSBA Reply Comments at 6.)

Allegheny commented that if fuel switching programs are determined to be acceptable by the Commission, the Company strongly believes that fuel switching programs must be voluntary as any other potential program offering and must not be mandated to be included in the EE&C plans. Allegheny submits that each EDC has assembled a portfolio of programs and measures in conjunction with its stakeholders to meet the mandated consumption and demand reduction targets and that any change to the portfolio must be thoroughly considered to ensure that the EE&C plan continues to meet all requirements of Act 129. (Allegheny Reply Comments at 1.)

PPL believes very strongly that fuel switching, just like any other energy efficiency measure, should be voluntary for EDCs as part of their Act 129 EE&C plans. PPL submits that fuel switching should not be prohibited nor should it be mandatory. In support, PPL states that Act 129 and the Commission’s Implementation Orders do not mandate the inclusion of any specific measure (e.g. CFLs, renewable energy, appliance recycling, T8 lighting, high efficiency motors, etc.) in an EDC’s EE&C plan. Each EDC included a mix of energy efficiency measures in its EE&C plan to provide the best opportunity for success, compliance, customer acceptance and satisfaction, and to best balance the objectives of Act 129, including program costs, energy reduction targets, peak load reduction targets, allocation of costs and savings among customer sectors, and cost-effectiveness. (PPL Reply Comments at 1.)

Staff Recommendation

Staff finds the position put forth by OCA, OSBA, FirstEnergy, Allegheny and PPL to be persuasive and believes that fuel switching measures should be available to EDCs and their stakeholders when considering the best means of achieving energy efficiency goals. However, just as no other particular energy efficiency program or measure has been mandated for implementation, fuel switching programs should not be mandated either.

Staff concurs with OCA and OSBA that EDCs should address the design and proposal of fuel switching programs through each EDC’s stakeholder processes along with all other programs in determining whether its energy efficiency plans need to be revised to meet the targets mandated by Act 129. Such revisions to an EE&C plan must be submitted to the Commission for approval under the processes set forth in the Commission’s *Energy Efficiency and Conservation Program Implementation Order*, entered January 16, 2009 at Docket No. M‑2008‑2069887 (*Implementation Order*).

1. Is it appropriate for electric customers to be subsidizing a conversion from electric to another fuel source?

UGI states that the purpose of Act 129 is not to preserve existing heating market shares for EDCs. Instead, “the focus of Act 129 and the TRC Test is not on particular technologies but rather on bottom line energy efficiency and demand reduction.” (UGI Comment at 4 citing the *TRC Order* at p. 6 (emphasis added by UGI).) UGI submits that if NGDCs or other alternative energy service providers benefit from increased throughput or sales from a fuel substitution program, it would be because the fuel substitution program is a cost‑effective way of promoting conservation and not because they are being unfairly favored. Stated another way, any benefits to NGDCs or other alternate energy providers would be a fall out, and not the purpose, of a fuel substitution program. (UGI Reply Comments at 4.)

According to UGI, it is fair for EDC customers to fund cost-effective fuel substitution programs. Under Act 129 funding mechanisms, EDC customers will be paying for EE&C plan programs, and their interest is in obtaining energy and peak load reductions at least cost, not in how the reduction is ultimately accomplished. If a fuel substitution program can deliver the required savings at less cost, then EDC customers will benefit. UGI submits that the Commission’s task is not to allocate market share to compensate for the impact of policies adopted by the General Assembly, but is instead to implement the policies of the General Assembly. (UGI Reply Comments at 4 and 5.)

OCA states that mandating fuel switching programs could lead to significant questions as a mandate could require ratepayer dollars of an electric utility to subsidize or support another utility and its growth in load. (OCA Reply Comments at 2.)

PPL strongly believes that EDCs should be permitted to continue to offer incentives for high-efficiency heat pumps, heat pump water heaters, and any other high efficiency electric measure that has an oil, gas or propane equivalent and that these incentives do not encourage conversion from oil, gas or propane. PPL states that it does not and will not promote conversion from oil, gas or propane equipment, noting that this decision is the customer’s to make. However, once a customer has decided to install a heat pump (in new construction, as a replacement for an old heat pump, to upgrade a heat pump, or to switch from another type of heater/air conditioner), PPL’s Act 129 incentives are intended only to encourage the customer to install a higher efficiency heat pump than the customer would have installed in the absence of the EDC’s incentives. (PPL Reply Comments at 2.)

Staff Recommendation

Staff agrees with UGI’s position that in so far as fuel switching programs are shown to be a cost‑effective means to meet the energy reduction requirements of EDCs, there is no reason to preclude an EDC from offering such programs as part of its EE&C plan portfolio. The decision to implement cost‑effective fuel switching programs, like other potential modifications to an EDC’s EE&C plan, should be developed through the stakeholder process and submitted for Commission approval through the processes set forth in the *Implementation Order*, where the Commission can determine whether the proposed subsidies are reasonable and in the public interest.

1. Is it appropriate in service territories where access to natural gas is not universally accessible?

FirstEnergy states that the discussion of the potential for fuel switching programs during the February 26, 2010 meeting indicated that there is uncertainty about the magnitude of the potential for savings that could be realized with a fuel switching program. The discussion during the meeting indicated that natural gas already has been garnering a major market share in the new construction market. The potential savings for fuel switching would, therefore, come from a change to natural gas use from electricity use for existing homes. According to FirstEnergy, the number of customers with the ability and desire to switch from electricity to gas is not known. FirstEnergy believes that collecting such information would be appropriate before any fuel switching programs could be reasonably formulated. (FirstEnergy Reply Comments at 1.)

UGI noted in its reply comments that cost‑effictive fuel substitution programs can supplement existing EDC EE&C programs, with end‑use consumers making the decision as to which programs best suit them. UGI also noted that to the extent customers would select a fuel substitution program the savings would be as easy or easier to verify as other conservation programs proposed by EDCs. (UGI Reply Comments at 3.)

Staff Recommendation

Staff finds that the likely penetration rates of fuel switching programs do not inherently disqualify such programs from being offered by EDCs. However, staff agrees with FirstEnergy that accurate information regarding the likely adoption of fuel switching programs is needed to fully assess the cost‑effectiveness of such programs. Such evidence would assist the Commission in its review of any proposed fuel switching measures, as the likelihood of adoption of such measures by customers is likely to vary by service territory.

1. If permitted, should there be a cap on the level of subsidy provided; if so, what should that cap be?

FirstEnergy states that another topic of concern regarding fuel switching programs pertains to the incentives that would need to be offered to households. In the analysis presented in FirstEnergy’s comments of February 12, 2010, it was shown that the payback from a customer’s perspective for switching from electricity to natural gas for water heating was less than six months. Thus, incentives to promote electric to natural gas fuel switching for water heating may not be needed. On the other hand, based on the numbers used for the space heating cost-benefit analysis, the payback from a customer’s perspective for switching from electric to natural gas for space heating would be nearly 20 years. This implies that a considerable incentive would be needed to induce households to make the fuel switch for space heating. Again, obtaining survey information regarding the ability and willingness of customers to switch from electricity to natural gas would be necessary to consider what incentives would be required to support a viable program. (FirstEnergy Reply Comments at 2.)

UGI disagreed, however, noting that fuel substitution programs could supplement existing programs, with customers making the ultimate decision as to what best suits their needs in the same manner as customers are permitted to choose between many electric EE&C measures. (UGI Reply Comments at 3.)

OSBA states that in the TRC test, incentives are irrelevant, and it suggests that they be dropped from the cost-benefit analysis. OSBA submits that, to the extent that the Commission allows fuel switching programs, incentives should be established in the same way other EE&C program incentives are established. Preferably, these incentives would be limited to those necessary to get customers to participate. (OSBA Reply Comments at 6.)

SEF submits that, on page 21 of the Commission’s *Implementation of Act 129 of 2008 – Total Resource Cost (TRC) Test Order*, entered June 23, 2009 at M‑2009‑2108601 (*TRC Test Order*), the Commission clearly states in section (d) that “[i]ncentive payments from an EDC to a customer would not be included in the TRC test because such costs would be a cost to the EDC and a benefit to the customer that would cancel each other out.” SEF maintains that, although rebate amounts are relevant in the context of each EDC’s EE&C plan, the amounts are irrelevant to this Working Group in determining the cost-effectiveness of fuel switching measures. (SEF Reply Comments at 3.)

Allegheny submits that the incentive levels included in the fuel switching proposals are substantial and would have significant impact on EDC EE&C plan budgets unless the programs are limited in some fashion or restricted to specific applications. In addition, based on the potential budget impact, the inclusion of fuel switching programs may impact the ability of an EE&C plan to provide a diversified portfolio that provides customers the opportunity to participate in and benefit from a program. (Allegheny Reply Comments at 2.)

UGI submits that it stated during the working group process that the Commission could easily limit the size of fuel substitution programs to ensure that they do not crowd out other energy efficiency programs. Specifically, UGI noted that it understands that fuel substitution measures would not be the only Act 129 EE&C plan program offerings, just as the programs proposed by Allegheny to subsidize high efficiency electric appliances are not the only programs offered by Allegheny. UGI believes that fuel substitution measures should supplement or replace similar electric EE&C measures that are not as cost‑effective, and that customer demand should determine the mix of measures ultimately installed or implemented up to program budget limits in the same manner as existing Allegheny Act 129 program measures are similarly budget‑limited. (UGI Reply Comments at 10.)

Staff Recommendation

Staff agrees with the positions of SEF and OSBA that, for the purposes of the TRC test, EE&C plan incentive payments are irrelevant. As such, staff finds that a strict cap on such payments may not be necessary. However, staff finds that EE&C plan incentive payments should be limited to the extent that excessively high incentive payments for any fuel switching program detract from the ability of an EDC to fund other programs and maintain a diversified portfolio of EE&C programs. Again, the amount of incentives to be offered in any proposed fuel switching measure should be developed through the EDC’s EE&C plan stakeholder process and presented for Commission approval through the processes set forth in the *Implementation Order*.

1. If permitted, should there be a minimum efficiency rating for the new equipment; if so what should the minimum efficiency rating be?

OSBA believes that the cost-benefit analysis would be more credible if cost‑benefit comparisons were made between high-efficiency options, not standard efficiency options. In the alternative, OSBA asserts that if a standard‑efficiency comparison is used, then the costs of the standard‑efficiency electric equipment should be considered a sunk cost in the analysis. (OSBA Reply Comments at 6.)

FirstEnergy maintains that, to the extent the fuel switching measures are to be considered, regulatory guidance as to efficiency standards for eligible gas equipment (*i.e.*, standard‑efficiency or better‑than‑standard efficiency) should be provided. (FirstEnergy Reply Comments at 1.)

UGI notes that the fuel substitution subgroup that developed the sample programs for discussion noted that it had used standard efficiency measures because electric customers will not save additional electric energy once a gas appliance is substituted for an electric appliance. In addition, UGI notes that it would not be appropriate to have EDC customers funding the upgrade of gas appliances from low to higher efficiency. (UGI Reply Comments at 9.)

Staff Recommendation

Staff agrees with FirstEnergy that guidance must be provided to determine efficiency standards for any equipment involved in a fuel switching program. Staff finds that the most effective manner in which to develop such guidance is through the annual TRM update process and the TRC test revision process set forth in the TRC Test Order. As the Commission must consider various issues in approving any EDC EE&C plan revision, the particulars of any proposed fuel switching measure must be justified based on the evidence presented, to include, but not limited to, the intent of Act 129, the ability of such measures to assist the EDC in meeting the mandated targets, the costs and the benefits of such measures.

1. If permitted, what level of electric energy savings should be attributable to the conversion?

* 1. Should it be the total electric load reduction?
  2. Should it be the difference between the btu ratings of the system being replaced and the new system?

OSBA comments that unless and until the legislature mandates some kind of social welfare test, neither the btus of fuel consumed nor the tons of carbon emitted are relevant to the analysis, except to the extent they are already reflected in incremental costs. Cost-benefit analyses should be based on actual costs and benefits consistent with the TRC methodology. (OSBA Reply Comments at 6.)

Staff Recommendation

Staff agrees with the position of OSBA that the TRC methodology does not allow for the inclusion of social welfare measures such as avoided carbon dioxide emissions when performing a cost-benefit analysis of any potential EE&C measure. Only costs and benefits as defined in the Commission’s *Implementation Order* should be considered in any determination of cost effectiveness. With that said, Staff recommends that the amount of electric consumption and peak demand reductions attributable to any particular fuel switching measure should be established and incorporated into the TRM through the annual TRM update process. Custom evaluation, measurement and verification (EM&V) methods for determining electric consumption and demand reductions should be developed by each EDC’s independent monitor and approved by the Director of the Bureau of Conservation, Economics and Energy Planning.

1. If permitted, what costs should be included in the TRC test analysis of such programs?

The subcommittee that was charged with providing cost-benefit analyses for various fuel switching programs laid out various cost-benefit analyses in MS Excel spreadsheets, attached to this report in the Appendix.

The subcommittee’s cost-benefit tests included the *Total Resource Cost Test,* as adopted by Act 129. In addition, for informational purposes, this subcommittee’s analysis evaluates the fuel switching programs under five other tests. Those tests are:

*Participant Test –* This test looks at the benefits and costs that a participant would experience.

*Rate Impact Measure Test –* This test looks at the avoided costs and incremental revenues of the affected EDCs and NGDCs.

*Program Administrator Test –* This test compares avoided EDC costs to program costs and incremental NGDC costs.

*Primary Fuel Utility Cost Test –* This test compares avoided EDC costs to the costs of the EDC incentive payment.

*Alternate Fuel Utility Cost Test –* This is not a test but instead displays the incremental natural gas supply costs associated with the use of a natural gas appliance.

Various parties supplied specific criticisms and critiques of the cost-benefit analyses provided for the five natural gas fuel switching examples.

FirstEnergy maintains that, to the extent the fuel switching measures are to be considered, the Commission should provide regulatory guidance as to avoided cost treatment for gas and other alternative fuel sources. (FirstEnergy Reply Comments at 1.)

OSBA states that the parameters used in the analysis provided thus far are simplistic and appear to contain significant and unexplained biases in favor of the fuel switching option. Other participants have questioned certain assumptions (*e.g.*, West Penn Power comments at 3). To inform the debate, the assumptions, parameters and risk factors should be clearly stated. (OSBA Reply Comments at 6.)

Allegheny proposes that the TRC test results proposed by the fuel switching subcommittee should be considered preliminary and not assumed to be representative or final for any proposed fuel switching measures. The TRC test results proposed by the fuel switching subcommittee only included certain direct costs and did not necessarily include all customer costs that may apply from location to location, and more importantly did not include any utility or program level costs for administration, management, marketing, or measurement and verification that are required. Also, as discussed at the FSWG meeting on February 26, 2010, Allegheny proposes that the final TRC test adopted by the Commission, as well as the TRM, need to be revised in order to support final cost-effectiveness testing for any proposed fuel switching programs. As such, until such time that the TRM and TRC are revised to provide the specific instruction on any fuel switching measures and the additional program costs, including all utility and customer costs are fully determined, the TRC test results proposed by the fuel switching subcommittee are not representative of the cost‑effectiveness of any proposed fuel switching programs. (Allegheny Reply Comments at 2 and 3.)

SEF asserts that issues such as market share or revenue gains or losses for EDCs are irrelevant to the Working Group and in the determination of (1) the appropriate treatment of fuel switching in the context of ACT 129 or (2) whether revisions to the TRM or (3) whether revisions to the TRC are warranted. (SEF Reply Comments at 2.)

Citizen Power believes that the analyses provided is reflective of a situation where the current equipment is no longer operating. Specifically, the analysis calculates a net measure cost by subtracting the cost of the alternate fuel equipment from the cost of the measure. This is appropriate in situations where the original equipment is no longer operational. However, in cases where functioning equipment is being replaced, the remaining life of the existing equipment needs to be accounted for in the calculation. Citizen Power recommended that the Working Group provide an additional cost benefit analysis that reflects a situation where operational equipment is being replaced. (Citizen Power Comments at 1.)

Columbia Gas states that in almost every instance, the analyses demonstrated a positive cost-benefit ratio. In addition, Columbia Gas submits that the analyses demonstrated positive total energy savings. Based on this, Columbia Gas avers that natural gas fuel switching would be a viable component of EE&C plans. Columbia Gas expresses the belief that while various aspects or assumptions in the analyses may be subject to debate, the analyses serves as a good starting point for further consideration about how natural gas fuel switching can assist EDCs in attaining their Act 129 usage and demand reduction targets. (Columbia Gas Comments at 2.)

UGI believes it would be appropriate to modify the TRM to specifically include certain fuel conversion programs. UGI does not believe any specific revisions are necessary if fuel conversion programs are to be evaluated on a custom, versus a deemed savings basis. UGI asserts that this is a topic that can be discussed by the working group and addressed in comments submitted in response to the Commission’s Tentative Order at Docket No. M‑00051865, and published in the February 20, 2010 edition of the Pennsylvania Bulletin. UGI also believes that the TRC test adopted by the Commission in the TRC Order already addresses fuel switching since it was based on the California Manual, and California has historically encouraged cost‑effective fuel substitution. (UGI Reply Comments at 10.)

Staff Recommendation

Staff finds that issues concerning the TRC and TRM for fuel switching should be remitted to the respective processes for updating or revising the TRC and TRM. Staff agrees with Allegheny that the TRC analyses provided to the Working Group are not complete; however, staff believes they may serve as a starting point for further discussion. Programs that appear cost‑effective in these analyses may be worthy of consideration by EDCs. However, staff also agrees with Allegheny that any proposed fuel switching programs must be thoroughly reviewed and also believes that these programs must be discussed and refined via the stakeholder process to fully assess and balance all impacts to the EE&C plans and EDC customers. Therefore, Staff recommends that any revisions to the TRC test to include fuel switching related specifics should be presented and reviewed under the TRC test revision process set forth in the *TRC Test Order*. In addition, Staff recommends that any proposed deemed savings associated with specific fuel switching measures should be presented and reviewed under the TRM update process.

1. Should the Commission establish an EE&C program for Gas Distribution Companies before allowing fuel switching programs?
2. Can the Commission establish such a program?
3. What elements should be included in any such program?

As a matter of policy, PPL believes that Pennsylvania natural gas distribution companies (NGDCs) should have mandatory reduction targets, similar to Act 129 to help gas customers reduce consumption. Otherwise, PPL is concerned that fuel switching merely “pushes the problem from electricity to gas." (PPL Reply Comments at 2.)

In KEEA’s opinion, the Commission should look beyond the current issue and set a broader gas conservation agenda before determining whether program‑wide fuel switching is warranted under Act 129. Without first mandating gas conservation programs, simply allowing broad-based programmatic fuel switching does not provide for a level playing field between electricity and gas resources or necessarily yield the best results for all consumers. KEEA also suggests that replacing demand for one energy source (electricity) while building demand for another source (gas) defies the intent of ACT 129 which was to promote energy efficiency. (KEEA Comments at 1 and 2.) The Public Utility Commission should consider deferring ruling on all but a limited number of fuel switching options until gas conservation plans are ready for implementation. This action will help safeguard against policies that may ultimately favor greater consumption of gas. (KEEA Comments at 2.)

SEF supports KEEA’s comments, specifically that natural gas local distribution companies should be encouraged by the Commission to file natural gas conservation plans that move customers towards more efficient equipment. (SEF Reply Comments at 3.)

The Industrial Customer Groups support the examination and pursuit of cost‑effective conservation and efficiency projects by individual commercial and industrial customers, but believe the establishment of natural gas conservation programs is not appropriate for larger customers. (Industrial Customer Groups Reply Comments at 2.)

UGI notes that on a total fuel cycle basis, the direct end use of natural gas for heating purposes would result in more NGDC system throughput, but would lead to an overall reduction in electric and gas usage because less gas will be used (and wasted) to generate electricity for heating purposes, even recognizing that not all electric generating units are powered by gas. UGI attached as Appendix B to its Reply Comments a diagram showing energy use on a national scale and the portion that is wasted through fuel conversion and distribution over electric transmission and distribution systems. A similar Pennsylvania‑specific analysis was utilized in preparing the fuel conversion examples developed by the subgroup and is the basis for the calculation of the energy saved by the proposed measures. These analyses show that the equation of increased NGDC system throughput with reduced energy efficiency is simply wrong. (UGI Reply Comments at 12.)

Staff Recommendation

Staff recommends that any energy efficiency program for NGDCs be addressed in another proceeding. While the benefits of an NGDC energy efficiency program may be in the public interest, such a program is beyond the scope of Act 129 and the mission of this Working Group.

1. Low Income Customer Fuel Switching

PULP states that it has no position on whether the Commission should prohibit, permit or require fuel switching generally. PULP submits that there are, however, three situations in which fuel switching may be cost effective as well as beneficial to health and safety. In these situations, PULP recommends that fuel switching should be approved.

1. **Fuel switching where a customer’s electric heating system is broken.** It may happen that an EDC or its agent, in the process of providing weatherization or Act 129 services, will discover that a low income household has no heat because the household’s electric heating system is broken. In these situations, when it is cost-effective for the customer, the EDC should be permitted to use EDC funds to replace the electric heating system with a natural gas system rather than repairing the old electric system or replacing the old electric system with a new electric system.
2. **Repairing or replacing a broken down gas furnace/heating system.** It may happen that an EDC or its agent, in the process of providing weatherization or Act 129 services to a low income household, discovers that the main heating source is natural gas, not electric. This often occurs where the household employs electric space heaters to heat the household due to the inoperability of the natural gas furnace, resulting in excessive electricity usage. In these situations, although not fuel switching per se, the EDC should be permitted to use EDC funds to repair the natural gas furnace or to replace it with another natural gas furnace.
3. **Replacing highly inefficient electric baseboard heat.** It may happen that an EDC or its agent, in the process of providing weatherization or Act 129 services to a low income household, discovers that the main heating source is electric baseboard heating, perhaps the most inefficient heating available. In these situations, when it is cost-effective for the customer, the EDC should be permitted to use EDC funds to replace this inefficient baseboard heating with a natural gas heating system.

(PULP Comments at 1-3.)

SEF supports the comments of PULP in that replacement of broken down space heating equipment provides both an economic and societal benefit. (PULP Reply Comments at 3.) CLS is fully supportive of the Fuel Switching Comments of PULP. (CLS Comments at 1.)

Citizen Power supports the comments of PULP. Specifically, Citizen Power supports the recommendations concerning fuel switching when an electric heating system is broken down in a low-income residence. Using EE&C plan funds to repair or replace an inoperable gas furnace to discourage the use of electric space heaters or to replace highly inefficient baseboard heat is appropriate. (Citizen Power Comments at 1.)

OCA supports the comments of PULP that identified some unique situations where fuel switching, or the use of energy efficiency dollars to repair gas furnaces, could provide a significant benefit to the public and to the consumer. In particular, OCA would highlight PULP’s suggestion that fuel switching is appropriate for consideration where a customer’s electric heating system is broken and an alternative fuel is available for heating that can provide a benefit over the repair or replacement of the existing electric heating system. Further, as stated by PULP, repair or replacement of a broken natural gas furnace could be appropriate under an EDC’s EE&C program if the customer is using inefficient electric space heaters to replace the broken furnace. OCA strongly supports PULP’s suggestion that, when a home has natural gas service available, but is using electric space heaters to heat the home or supplement an inefficient natural gas or oil furnace, the use of an EDC’s energy efficiency dollars to repair or upgrade that furnace can provide an overall benefit. (OCA Reply Comments at 3.)

Staff Recommendation

Staff recommends that EDCs be permitted to consider fuel switching programs for low income customers as described by PULP. To the extent that these programs would be shown to be cost‑effective and assist the EDCs in meeting the Act 129 consumption and demand reduction targets, Staff recommends that they be eligible for inclusion in revised EE&C plans. Furthermore, such programs may also help meet the EDCs’ Act 129 targets for low income energy efficiency and conservation measures. As such, proposed fuel switching programs targeted to low income customers should be developed through the EDC stakeholder process and presented for Commission approval through the processes set forth in the *Implementation Order*.

1. Fuel Neutrality

FirstEnergy and PPL point out that the FSWG initially agreed that any fuel switching measure, if permitted by the Commission, should be fuel neutral. The only examples set forth by the subcommittee and commented on to date addressed natural gas technologies, and no other substitute fuels have been considered. To optimize choice for customers, including those without access to natural gas, it is vital for the FSWG to consider other fuels such as propane or oil. (FirstEnergy Reply Comments at 2 and PPL Reply Comments at 2.)

SEF recommends the Commission direct EDCs that offer efficient electric space heating or water heating equipment programs to offer comparable programs that provide equivalent incentives for ratepayers choosing a competing energy source such as biomass, solar thermal or natural gas. SEF submits that if an EDC does not offer space heating or water heating equipment programs as part of its EE&C plan then it should not be required to offer an equivalent fuel switching program. This methodology would provide ratepayers with an opportunity to evaluate their specific situation and determine which energy source best meets their needs while at the same time reducing electricity consumption and demand. (SEF Reply Comments at 3.)

Staff Recommendation

Staff agrees with FirstEnergy and PPL that the consideration of fuel switching programs must be fuel neutral. Staff recommends that any fuel switching program that passes a cost‑effectiveness test and assists the EDC in meeting its consumption and demand reduction targets should be allowable within an EDC’s EE&C plan. Therefore, proposed fuel switching programs, regardless of fuel type, should be developed through the EDC stakeholder process and presented for Commission approval through the processes set forth in the *Implementation Order*.

# Conclusion

While the Fuel Switching Working Group did not reach consensus on the issues raised, it none the less recommends that the Commission release this Report and adopt, reject, modify or add to the Staff’s recommendations contained in it. In addition, the Working Group recommends that the Commission direct the Bureau of Conservation, Economics and Energy Planning to develop deemed evaluation, measurement and verification protocols for specific energy efficiency measures that involve switching from electricity to another fuel source, to be considered for inclusion in the Technical Reference Manual. The Bureau of Conservation, Economics and Energy Planning is to develop these protocols in conjunction with the Statewide Evaluator and through the annual Technical Reference Manual revision process.

Furthermore, the Working Group recommends that the Commission direct the Bureau of Conservation, Economics and Energy Planning to develop, for Commission review, recommended changes to the Total Resource Cost Test needed to appropriately analyze the costs and benefits of energy efficiency measures that involve switching from electricity to another fuel source. The Bureau of Conservation, Economics and Energy Planning is to develop these recommended changes to the Total Resource Cost Test in conjunction with the Statewide Evaluator and the Total Resource Cost Test Working Group.

1. *Petition of West Penn Power Company d/b/a Allegheny Power for Approval of its Energy Efficiency and Conservation Plan*, Order entered October 23, 2009 at Docket No. M-2009-2093218; *Petition of PPL Electric Utilities Corporation for Approval of its Energy Efficiency and Conservation Plan*, Order entered October 26, 2009 at Docket No. M-2009-2093216; *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan*, Order entered October 27, 2009 at Docket No. M-2009-2093217; *Joint Petition of Metropolitan Edison Company, Pennsylvania Electric Company and Pennsylvania Power Company for Consolidation of Proceedings and Approval of Energy Efficiency and Conservation Plans,* Order entered October 28, 2009 at Docket No. M- 2009-2092222, M-2009-2112952 and M-2009-2112956; *Petition of PECO Energy Company for Approval of its Act 129 Energy Efficiency and Conservation Plan and Expedited Approval of its Compact Fluorescent Lamp Program*, Order entered October 28, 2009 at Docket No. M-2009-2093215 (collectively Orders). [↑](#footnote-ref-1)
2. This group consists of the Industrial Energy Consumers of Pennsylvania, Central Penn Gas Large Users Group, Columbia Industrial Intervenors, Duquesne Industrial Intervenors, Met‑Ed Industrial Users Group, Penelec Industrial Customer Alliance, Penn Power Users Group, Philadelphia Area Industrial Energy Users Group, Philadelphia Industrial and Commercial Gas Users Group, PNG Industrial Intervenors, PP&L Industrial Customer Alliance, UGI Industrial Intervenors, and West Penn Power Industrial Intervenors. [↑](#footnote-ref-2)