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April 17, 2012

**HAND DELIVERED**

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street  
Harrisburg, PA 17120

Re: Act 129 Energy Efficiency and Conservation Program Phase Two  
Docket No. M-2012-2289411

Dear Secretary Chiavetta:

Enclosed please find one original and three copies of PennFuture's Comments in the above-referenced proceeding.

Please do not hesitate to contact me should you have any questions.

Sincerely,

Courtney Lane  
Senior Energy Policy Analyst  
Citizens for Pennsylvania's Future (PennFuture)  
Energy Center for Enterprise and the Environment

Enclosures

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**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION:**

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Act 129 Energy Efficiency and Conservation Program Phase Two : Docket No. M-2012-2289411

**COMMENTS OF**

**CITIZENS FOR PENNSYLVANIA'S FUTURE (PENNFUTURE)**

**I Introduction**

PennFuture is a statewide public interest membership organization, working to enhance Pennsylvania's environment and economy, with offices in Harrisburg, Philadelphia, Pittsburgh and Wilkes-Barre. We appreciate the opportunity to provide comments on Act 129 Energy Efficiency and Conservation Program Phase Two, Docket No. M-2012-2289411.

We commend the Commission for beginning its investigation into Phase II of Act 129 in a timely fashion. This advanced planning will allow for a more seamless and cost-effective transition to Phase II and avoid disruption to the energy efficiency marketplace. The continuation of Act 129 is essential to protecting electric customers and improving the overall reliability of our electric system. Investment in energy efficiency lowers system-wide electricity costs, reduces customers' electricity bills, reduces peak demand and strain on the electric grid, mitigates environmental impacts and promotes economic development, all while costing less than generating, transmitting and distributing electricity. Recent studies have shown that the average utility cost of saved energy through energy efficiency is \$0.025 per kilowatt-hour (kWh) – more than three times less than generation side resources, which typically cost between \$0.07 and \$0.15 per kWh.<sup>1</sup> The Act 129 programs have followed this trend, achieving 2,073 gigawatt-hours (GWh) in electricity savings for an average levelized cost of only \$0.016 per kWh.<sup>2</sup>

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<sup>1</sup> Friedrich, Katherine, Maggie Eldridge, Dan York, Patti Witte, and Marty Kushler, American Council for an Energy-Efficient Economy (ACEEE), *Saving Energy Cost-Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs*, 2009.

<sup>2</sup> Optimal Energy, Inc., *Pennsylvania 2013 – 2018 Energy Efficiency Goals*, 2011.

The benefits of energy efficiency are clearly demonstrated by the effectiveness of Act 129 in the first two program years. According to a recent study by Optimal Energy, Act 129 energy efficiency programs lowered the state's electric load by 2,073 gigawatt-hours (GWh) as of May 31, 2011. This reduction represents approximately \$278 million in annual savings to electric customers that participated in Act 129 programs. It should also be noted that these savings were achieved in an extremely cost-effective manner. Over the expected life of the installed energy efficiency measures, these savings represent a present value of \$2.3 billion for an upfront cost of only \$281 million. This means that for every dollar spent on Act 129 programs, customers received \$8 in energy savings.<sup>3</sup>

Act 129 programs have proven to be a cost-effective means to provide Pennsylvania electric customers with the tools to manage and reduce their energy consumption and we urge the Commission to maintain a robust program in Phase II of the Act.

## **II Comments in Answer to Specific Questions Posed By the Commission**

### **1. Planning timeline**

PennFuture generally supports the Commission's proposed planning timeline. We believe the timeline finds an appropriate compromise between giving stakeholders the needed time to review and comment while also providing electric distribution companies (EDCs) with enough time to develop and finalize their Energy Efficiency and Conservation (EE&C) plans.

One area of improvement relates to the release of the Statewide Evaluator's Baseline Study Results and Pennsylvania Electricity Market Potential Study Results. PennFuture respectfully asks the Commission to move up the release of these studies so stakeholders can review them before the Tentative Implementation Order is issued. Releasing the studies on the same day as the Tentative Implementation Order does not provide enough time for stakeholders to review and ask follow-up questions of the Statewide Evaluator before drafting comments. The proposed future Act 129 savings goals set forth in the Tentative Implementation Order will be informed by the results of the Statewide Evaluator's studies. Therefore it seems reasonable that the studies will be completed in advance of the release of the Tentative Order and should be given to the stakeholders as soon as practicable.

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<sup>3</sup> Optimal Energy, Inc., *Pennsylvania 2013 – 2018 Energy Efficiency Goals*, 2011.

PennFuture also recommends that the Commission issue a Tentative Implementation Order for a temporary demand response program on May 10, 2012 to allow for EDCs to continue their existing demand response programs through September 30, 2013. PennFuture details its recommendations for a one year continuation in Section 3 of these comments. Allowing for a one year continuation of demand response programs is critical to avoiding a disruption in the marketplace. If the Commission waits until the fall to rule on the continuation of demand response programs, there will not be enough time for new plans to be approved, programs to be designed and conservation service providers (CSPs) to recruit customers prior to June 1, 2013. This would lead to no Act 129 demand response programs for the summer of 2013, which in turn would create customer confusion and make it more difficult for CSPs to find participants for programs in 2014.

## **2. Length of second EE&C Program**

PennFuture recommends the Phase II Energy Efficiency and Conservation (EE&C) programs be five years in length (June 1, 2013 – May 31, 2018). A longer program length provides for lower administrative costs, improves economies of scale and helps to create certainty in the energy efficiency marketplace. A five year plan will also provide more certainty to allow for EDCs to bid Act 129 energy efficiency and demand response resources into PJM's Reliability Pricing Model (RPM) capacity market, which can create a valuable revenue stream.

According to the American Council for an Energy-Efficient Economy (ACEEE), 11 out of 24 states with Energy Efficiency Resource Standards (EERS) have long-term energy savings targets of six years or more in length.<sup>4</sup> Based on these findings a five year EE&C program is feasible and well within the standard practice of states across the country.

With a long-term goal it is critical that the Commission take steps to ensure EDCs are on track to meeting their 2018 goals. PennFuture recommends that the Commission create annual consumption reduction targets, or at least an interim target for year two of the program (May 31, 2015), and continue requiring EDCs to provide annual reports on EE&C plan implementation.

While PennFuture understands the need to find balance between a long-term program and uncertainties with the evolving energy efficiency marketplace, we believe there are already procedures in place to provide EDCs with the flexibility to revise their EE&C plans throughout the

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<sup>4</sup> Sciortino, Michael, Seth Nowak, Patti Witte, Dan York, and Martin Kushler, American Council for an Energy-Efficient Economy (ACEEE), *Energy Efficiency Resource Standards: A Progress Report on State Experience*, 2011.

five year program to adapt to any changes. In its June 9, 2011 Final Order on Energy Efficiency and Conservation Program (Docket No. M-2008-2069887) the Commission approved an expedited review process for minor changes to EE&C plans, including 1) eliminating a measure that is underperforming, no longer viable for reasons of cost-effectiveness, savings or market penetration or has met its approved budgeted funding, participation level or amount of savings; 2) switching funds between programs within the same customer class; and 3) adding or changing the conditions of a measure so long as the change does not increase the overall costs to that customer class. This Order allows for EDCs to respond to changing market conditions and learn from program experience without a lengthy regulatory review process.

PennFuture also recommends that EDCs continue to hold quarterly stakeholder meetings. These meetings provide for transparency and allow stakeholders the opportunity to provide input on EDC plans and proposed changes. These meetings have proven beneficial by providing EDCs a forum to gain stakeholder support of proposed plan changes prior to seeking approval from the Commission, leading to fewer contested filings.

### **3. Inclusion of a Demand Response Curtailment Program**

#### Rationale for Continuation of Demand Response

The higher the peak demand, the larger and more expensive the grid becomes to supply power during peak times. For this reason, power supply is very expensive during periods of peak demand and any reduction can create cost savings to customers. Demand response programs also help ensure electric system reliability by reducing system emergencies and black-outs. In addition, since both transmission and generation capacity are sized to meet peak demand, reductions can avoid or delay investments in costly new power plants and power lines. For these reasons, PennFuture supports the continuation of an Act 129 demand response program for the benefits it provides to electric customers and the grid. Other states have made strong commitments to demand response as part of their energy efficiency resource standards. There are at least six other states that have demand response carve-outs as detailed in Table 1 below.

**Table 1: State EERS Peak Demand Requirements**

| <b>State</b> | <b>Reduction Requirements</b>   |
|--------------|---|
| California   | Reductions vary by utility based on a fixed percentage (20%) of the GWh savings goals   |
| Colorado     | 5% of 2006 peak demand by 2018  |
| Delaware     | 15% of 2007 peak electric demand by 2015  |
| Illinois     | 0.1% reduction in peak demand each year for 10 years (EY 2009-2019)   |
| Maryland     | Reduction in per capita peak energy demand (measured in kW) of 5% percent by 2011, 10% by 2013, and 15% by 2015, compared to 2007 |
| Ohio         | 1% reduction in peak demand in 2009, 0.75% reduction in peak demand each year through 2018  |

Demand response programs are cost-effective, especially when the benefits of installed measures are looked at over their full measure life. The Federal Energy Regulatory Commission (FERC) recently performed an economic screen for Dynamic Pricing with Enabling Technology programs and Direct Load Control with Enabling Technology programs using a simple version of the Total Resource Cost (TRC) test comparing the lifetime benefits of demand response (avoided capacity costs) relative to the associated costs to enable each option (technology, implementation and delivery) in every state. FERC found that these programs are highly cost-effective in all customer classes in Pennsylvania.<sup>5</sup>

As the Statewide Evaluator moves forward with its cost-benefit analysis of EDC demand response programs, it is important that the costs and benefits of these programs are examined over the full life of any installed measures, not just the “program life” of one summer. Demand response programs like direct load control rely on the installation of measures on customer’s central air conditioning and electric water heater units to achieve demand reductions. Such measures remain installed and functioning well after the end of the current program. The costs and benefits should be calculated over the measure’s full life. As the Office of Consumer Advocate stated in its comments on TRC test, “The direct load control program is often somewhat expensive to deploy, but once deployed, it is available over a long period of time to provide on-going benefits to both the system and the customer.”<sup>6</sup> If the Statewide Evaluator does not take into account the full equipment life of

<sup>5</sup> Federal Energy Regulatory Commission (FERC) Staff Report, *A National Assessment of Demand Response Potential*, prepared by The Brattle Group, Freeman, Sullivan & Co and Global Energy Partners, LLC, 2009.

<sup>6</sup> Comments of the Office of Consumer Advocate. June 3, 2011. *Implementation of Act 129 of 2008 – Total Resource Cost (TRC) Test 2011 Revisions*. Docket No. M-2009-2108601.

installed measures, these programs could be found to not pass the cost-benefits screen and be discontinued. This would be inappropriate since EDCs have already received cost-recovery for these measures, leading to a situation where ratepayers paid for measures that they are no longer able to utilize.

### Commission Options for Including Demand Response

Based on the benefits that demand response can offer, PennFuture recommends that the Commission issue a Tentative Implementation Order on May 10, 2012 to allow for EDCs to continue their existing and approved demand response programs through September 30, 2013. Allowing for a one year continuation of demand response programs is critical to avoiding a disruption in the marketplace. If the Commission waits until the fall to rule on the continuation of demand response programs, there will not be enough time for new plans to be approved, programs to be designed and conservation service providers (CSPs) to recruit customers prior to June 1, 2013. This would lead to no Act 129 demand response programs for the summer of 2013, which in turn would create customer confusion and make it more difficult for CSPs to find participants for programs in 2014.

While PennFuture recommends that the Commission allow for a continuation of existing EDC demand response programs until September 30, 2013, the budgets for these programs should be reduced. In the Act 129 Phase I plans, EDCs had demand response budgets as high as 30% of total EE&C plan funding. These budgets reflect the need for EDCs to overspend on demand response programs due to the uncertainty of meeting the 100 highest hours requirement. The top 100 hours requirement is a burden on both the EDCs and the CSPs. EDCs will not know what the top 100 hours were until after the date they must meet their mandated 4.5% reduction. This creates a guessing game where EDCs must overspend and over-curtail load to ensure they avoid a penalty, leading to a waste of limited Act 129 funds. This is not a good use of ratepayer funds that could otherwise go to energy efficiency programs. Therefore, PennFuture recommends that the Commission change this requirement for the next phase of Act 129 to some other metric. For example, EDCs could be required to call curtailment events based on a predetermined peak demand threshold. This model is used by Con Edison for their demand response programs. Con Edison forecasts its summer peak in the late summer to early fall of the previous year. Then planned curtailment events are called if the day ahead forecast is 96% (or greater) of that forecasted summer

peak demand.<sup>7</sup> Moving away from the top 100 highest hours requirement to the Con Edison model or something similar, will reduce risk to both the EDCs and CSPs and allow for more Act 129 funds to go towards energy efficiency programs where they will be needed to capture deeper savings in Phase II.

#### Reallocation of Demand Response Funds

If for any reason the Commission cannot identify a cost-effective demand response program for the next phase of Act 129, it is critical that funding set aside for demand response programs is reallocated to EE&C plans for energy efficiency programs. As Act 129 clearly states, it is in the public interest to adopt EE&C measures and “the health, safety and prosperity of all citizens of this Commonwealth are inherently dependent upon the availability of adequate, reliable, affordable, efficient and environmentally sustainable electric service at the least cost, taking into account any benefits of price stability, over time and the impact on the environment.”<sup>8</sup> The least and most cost-effective way to improve electric reliability, reduce customer bills and reduce impacts to the environment is to invest in energy efficiency measures. Failure to redirect available Act 129 funds to energy efficiency measures would go against the original intent of the Act.

#### **4. Aligning EDC Targets and Funding Using Dollars per MWh of Expected Reductions**

With all the benefits energy efficiency can bring, it should be the policy of the Commission to require EDCs to procure as much cost-effective energy efficiency as possible within the constraints of Act 129. This means having each EDC spend up to their 2% cap to achieve the greatest level of electricity savings possible, not reducing EE&C plan budgets for larger EDCs. This would arbitrarily limit the amount of investment occurring in energy efficiency, which would reduce benefits to all customers and the electric grid. Allowing EDCs to spend up to the 2% cap will also enable them to go after deeper savings from whole building programs that will be needed as least cost measures like compact fluorescents reach socket saturation.

PennFuture recently commissioned a study by Optimal Energy to look at what achievable savings goals would look like in the next phase of Act 129. The study examined the achievable economic energy efficiency potential in the state, reviewed actual costs per annual kilowatt-hour

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<sup>7</sup> [http://www.coned.com/energyefficiency/demand\\_response.asp](http://www.coned.com/energyefficiency/demand_response.asp)

<sup>8</sup> Act of Oct. 15, 2008, P.L. 1592, No. 129



(kWh) saved in several states with energy efficiency programs, and took into account the mandated 2% spending cap to determine the future goals.

Optimal concluded that with the spending cap in place, annual consumption reduction goals for the next phase of Act 129 should continue at the rate of 1% savings per year. This would equal a required additional incremental reduction of 2% by 2015 and 5% by 2018 as detailed in Table 2 below. The proposed savings goals would produce a cumulative reduction of 7,330 GWh by May 31, 2018, which would lead to \$932 million in annual electric bill savings to customers. Over the expected life of the installed energy efficiency measures, these savings represent a present value of \$7.8 billion, an avoidance of 80 million tons of carbon dioxide emissions (the equivalent of taking 14 million cars off the road), and the creation of over 14,000 job years.<sup>9</sup>

| <b>Utility</b>    | <b>2009-2010 Sales (GWh)</b> | <b>2015 Goal (GWh)</b> | <b>% of 2009/10 Sales</b> | <b>2018 Goal (GWh)</b> | <b>% of 2009/10 Sales</b> |
|-------------------|------------------------------|------------------------|---------------------------|------------------------|---------------------------|
| <b>Duquesne</b>   | 14,085                       | 282                    | 2%                        | 704                    | 5%                        |
| <b>Met-Ed</b>     | 14,865                       | 297                    | 2%                        | 743                    | 5%                        |
| <b>Penelec</b>    | 14,399                       | 288                    | 2%                        | 720                    | 5%                        |
| <b>Penn Power</b> | 4,773                        | 95                     | 2%                        | 239                    | 5%                        |
| <b>PPL</b>        | 38,200                       | 764                    | 2%                        | 1,910                  | 5%                        |
| <b>PECO</b>       | 39,385                       | 788                    | 2%                        | 1,969                  | 5%                        |
| <b>West Penn</b>  | 20,939                       | 419                    | 2%                        | 1,047                  | 5%                        |
| <b>Total</b>      | <b>146,646</b>               | <b>2,933</b>           | <b>2%</b>                 | <b>7,332</b>           | <b>5%</b>                 |

If the Commission decides that the next phase of Act 129 should be based on the same baseline 2009-2010 energy year forecast with additional savings targets added to those in Phase I, the above targets would be expressed as a cumulative savings goal of 5% in 2015 and 8 % in 2018.

Considering the fact that Optimal found there is the economic (cost-effective) potential for Pennsylvania to meet 21% of its projected 2018 load, or 31,500 GWh, from energy efficiency measures, these goals are quite modest. A 1% annual savings goal also places Pennsylvania at the low-end of what other states are achieving across the country. Nine states achieved 1.2% of annual sales in their most recent reporting years and leading states such as Vermont, Massachusetts, and

<sup>9</sup> Optimal Energy, Inc., *Pennsylvania 2013 – 2018 Energy Efficiency Goals*, 2011.

Rhode Island are now achieving over 2% savings per year or have submitted multi-year plans with greater than 2% annual savings.<sup>10</sup>

The results of the Optimal study assert that these goals should be attainable for each EDC within the 2% cap. However, understanding that the three utilities with the smallest budgets (West Penn, Penn Power and Duquesne) rely on fewer dollars per MWh to achieve these goals, it would be permissible to allow these EDCs to petition the Commission for a reduction in their goals, if and only if they can demonstrate they used programmatic tools that are proven to keep EDC costs low such as obtaining savings from behavioral programs and utilizing economies of scales through joint or statewide programs.

#### A. Behavioral Programs

Encouraging behavioral changes in electric customers to reduce consumption is a cost-effective means to capture electricity savings. Behavior-based strategies are becoming a growing trend in states that have to meet larger energy efficiency goals. Such programs focus on non-financial influence to affect electric customer decision-making. For example, benchmarking a customer's usage against comparable customers in the same geographical area and reporting the results. These programs, like National Grid's Home Energy Report, are being offered in both Massachusetts and New York. However, to date, only PPL has a behavioral program in its EE&C plan. The Statewide Evaluator approved a Custom Measure M&V Protocol for PPL's Energy Efficiency Behavior & Education program.<sup>11</sup> This program is highly cost-effective with a TRC of 3.3 and should be adopted by other EDCs in the next Phase of Act 129 to achieve more savings at a lower cost.

#### B. Joint programs

Joint EE&C programs improve economies of scale, avoid unnecessary program overlap that may cause confusion among customers and contractors, improve transparency, and increase the effectiveness of marketing and branding, all allowing for energy savings to be captured more cost-effectively.

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<sup>10</sup> Sciortino, Michael, Seth Nowak, Patti Witte, Dan York, and Martin Kushler, American Council for an Energy-Efficient Economy (ACEEE), *Energy Efficiency Resource Standards: A Progress Report on State Experience*, 2011.

<sup>11</sup> Custom Measure M&V Protocol PPL Electric's OPOWER Energy Education Program

FirstEnergy is an excellent example of a model that could be applied on a statewide level. While incentive levels differ across FirstEnergy's service territories, they offer the same programs and utilize the same conservation service providers (CSPs). For instance, Met-Ed, Penelec and Penn Power all offer the same energy audit, energy efficiency rebate, HVAC and Easy Cool Rewards programs to name a few. FirstEnergy also uses the same marketing materials and branding for Met-Ed, Penelec and Penn Power's commercial and industrial programs. Other EDCs have also gained experience with program collaboration through their appliance recycling programs that utilize the same CSP, JACO Environmental.

As we transition into the second phase of Act 129, we would urge the Commission to encourage statewide or joint programs to enable EDCs to achieve savings more cost-effectively. For example, in Massachusetts, all of the EDCs collaborate through working groups, statewide implementation of programs, standardized rebate forms and certification standards. Depending on the program, these utilities either submit a joint RFP and contract with a single service provider, or will each submit its own RFP and bid out for CSPs separately but make sure that branding and incentive levels are coordinated through the statewide Mass Save brand (<http://www.masssave.com>). Similar joint programs can be found with the Connecticut Energy Efficiency Fund programs (<http://ctsavesenergy.org/index.php>).

## **5. Inclusion of a Reduction Target Carve-Out for the Government, Educational and Non-Profit Sector**

### Inclusion of Carve-Out

Based on the language in the law, it is clear that the 10% carve-out must continue in any future EE&C plans. As stated in 66 Pa.C.S. § 2806.1(b)(1)(i)(B), pertaining to the requirements for EE&C plans to be filed by EDCs and approved by the Commission, "A minimum of 10% of the required reductions in consumption under subsections (c) and (d) shall be obtained from units of Federal, State and local government, including municipalities, school districts, institutions of higher education and nonprofit entities", where subsections (c) and (d) refer to the current and any future required reductions in consumption and peak demand.<sup>12</sup>

This language is also clear that the 10% carve-out must be applied to the consumption reduction targets set forth by the Commission. Therefore, by law the 10% requirement must be a

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<sup>12</sup> 66 Pa.C.S. § 2806.1(b)(1)(i)(B)

percentage of overall program savings. It cannot be reduced and cannot be based on an EE&C budget carve-out.

### On-Bill Financing/On-Bill Repayment

PennFuture supports the development of EDC on-bill financing pilot programs; however, there is much more need for this program in the small-business sector. According to ACEEE, at least 20 states have utilities offering on-bill programs, with the majority of these programs focusing on small-business, multi-family and residential sectors.<sup>13</sup>

The small business sector is difficult to reach with Act 129 rebate dollars alone. Even with the availability of rebates, small businesses typically operate under tight budgets and often lack the upfront capital needed to finance energy efficiency improvements. In addition, with a large percentage of small-businesses renting, “split incentives” become another barrier to investing in energy efficiency. “Split incentives” refers to the scenario where a landlord has little incentive to invest in energy efficient upgrades when the tenant pays the energy bills and therefore would recoup all of energy savings of that investment.

On-bill financing programs can help address the barriers to adoption of energy efficiency in the small business sector better than traditional financing options. On-bill financing programs leverage customers’ existing relationship with the EDC, enabling them to invest in energy efficiency improvements without any upfront cost and providing a mechanism to pay for the installed measures through their monthly utility bills. On-bill programs can also be tied to the meter, not the building owner, to help address the “split incentives” issue where the landlord is not interested in capital expenditures because the tenant pays the utility bill. The program can also be structured so the repayment stays with the meter when the current owner or tenant moves.

On-bill programs can be underwritten and financed by private, third-party capital, such as community development financial institutions, or banks and credit unions, allowing the EDC to avoid liabilities on their balance sheet. PennFuture supports this model for Pennsylvania, often referred to as on-bill repayment. Several on-bill repayment programs have been successful at attracting third-party capital, due to the fact that these programs have proven low default rates

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<sup>13</sup> Bell, Catherine J., Steven Nadel, Sara Hayes, American Council for an Energy-Efficient Economy (ACEE), *On-Bill Financing for Energy Efficiency Improvements: A Review of Current Program Challenges, Opportunities, and Best Practices*, 2011.

ranging from 0 to 2%.<sup>14</sup> In addition, lenders perceive on-bill repayment as lower risk due to the notion that customers tend to prioritize their utility bills. These factors can lead lenders to offer substantially lower rates, longer maturities and better terms than they would for a conventional energy efficiency loan program.<sup>15</sup> Some programs even create a loan loss reserve fund to cover any potential loan defaults, which is also useful in attracting third-party capital. Examples of on-bill repayment programs include 1) Illinois where a community bank, Covenant, is providing \$12.5 million in permanent capital and Pennsylvania's own AFC First Financial Corporation is the program administrator; and 2) Kentucky, where their How\$martKY program is administered and financed in part by a CDFI, The Mountain Association for Community Economic Development.<sup>16</sup>

While on-bill programs are valuable tools in promoting energy efficiency in hard-to-reach customer sectors, it is important that they are developed with safeguards in place to protect the EDC, the lender and the customer. For example, the New York on-bill program has customer requirements such as: a debt income ratios less than 50%, no bankruptcy claims in the past 7 years and no outstanding collections, judgments, or tax liens greater than \$2,500.<sup>17</sup>

PennFuture encourages the Commission to convene a working group to develop an on-bill repayment model that works best for Pennsylvania and Act 129. This group should reach out to other states that have adopted on-bill programs to learn from their experience.

## **6. Inclusion of a Low-Income Sector Carve-Out**

PennFuture supports the continuation of a carve-out for the low-income sector identical to what was implemented in Phase I. Each EE&C plan should include specific energy efficiency measures for households at or below 150% of the Federal Poverty Income Guidelines in proportion to that sector's share of the total energy usage in the EDC's service territory.

## **7. Transition Issues**

### Banking and Reconciliation of Funds

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<sup>14</sup> Bell, Catherine J., Steven Nadel, Sara Hayes.

<sup>15</sup> Brad Copithorne, James Fine, Environmental Defense Fund, *On-Bill Repayment: Unlocking the Energy Efficiency Puzzle in California*, 2011.

<sup>16</sup> Bell, Catherine J., Steven Nadel, Sara Hayes.

<sup>17</sup> [http://www.nyserda.ny.gov/en/About/Statewide-Initiatives/On-Bill-Recovery-Financing-Program.aspx?sc\\_database=web](http://www.nyserda.ny.gov/en/About/Statewide-Initiatives/On-Bill-Recovery-Financing-Program.aspx?sc_database=web)

PennFuture believes it should be the policy of the Commission to require an EDC that reaches its Act 129 savings requirements ahead of schedule to continue offering approved EE&C programs in its current plan so long as spending remains under the 2% cap. In return, the Commission should allow any excess reductions in energy consumption to be carried forward to meet future Act 129 goals. The Commission should not reduce the EDC's Phase II budget in response to banked savings. As stated previously in the comments, EDCs will benefit from as much funding as possible in the second phase of the Act to allow them to go after deeper savings as the cheapest savings from low hanging fruit become less available.

Allowing for EE&C programs to continue up until the start of the next phase of Act 129, or until budgets are exhausted, will ensure that there are no disruptive gaps in programs. Allowing EDCs to shut down programs once they reach their goals will create a "blackout" period that will create confusion to customers, retailers and contractors resulting in harm to the existing market transformation achievements of Act 129. In addition, it is less cost-effective for programs to be shut down and then ramped back up again as money that could have been used for continuing EE&C programs will need to be directed back to start-up and administrative costs.

PennFuture also recommends that any leftover funding from Phase I EE&C plan budgets be carried over for use in the second phase. There should be no reconciliation for over collection. The Commission should make use of all available Act 129 funds to promote the maximum amount of cost-effective energy efficiency in Pennsylvania.

Some parties argue that not reconciling budgets to customers is harmful. We would argue that not spending these funds on energy efficiency is far worse. This is due to the fact that even though Act 129 creates a small increase in electric customers' rates, it results in lower net costs by lowering their electric bills. As the Commission well knows, electric customers pay bills not rates. Bills are the product of rates multiplied by consumption. Energy efficiency programs reduce energy consumption and therefore, even if rates go up, bills go down for those customers who participate in Act 129 programs. For example, if a customer reduces their use by 10% but rates go up by 2% then the customer's bill goes down by 8%.<sup>18</sup> As EDCs continue to deliver programs, more and more customers will have an opportunity to experience these bill-reduction benefits.

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<sup>18</sup> York, Dan and Martin Kushler, American Council for an Energy-Efficient Economy (ACEE), *The Old Model Isn't Working: Creating the Energy Utility for the 21st Century*, 2011.

Investments in energy efficiency also benefits customers that do not participate directly in Act 129 programs. Many states are beginning to recognize Demand Reduction Induced Price Effects (DRIPE) as a quantifiable benefit of energy efficiency and demand response. DRIPE is a measurement of the value of efficiency in terms of the reduction of wholesale energy prices seen by all electric customers. The reduced energy demand due to efficiency programs allows for the shedding of the most expensive resources on the margin and lowers the overall costs of energy. This in turn reduces wholesale electricity prices, which is passed on to all electric customers. The effects on energy prices are small in terms of percentage reductions; however, the absolute dollar impacts are significant as the percent price reduction is applied across the entire body of all Pennsylvania electric customers. DRIPE effects in New England are now estimated to last 11 years for peak capacity reductions, and 13 years for energy reductions. The per kWh values of DRIPE vary based on energy period and region, but for New England it ranges from \$0.001/kWh to \$0.032/kWh for energy depending on energy period and region, and from \$2.23/kW to \$59.07/kW for peak demand, depending on the region.<sup>19</sup>

#### Operationalization of Phase II Requirement

PennFuture supports the Commission's proposal to maintain the current 2009-2010 energy year forecast baseline and to have the next percentage reduction targets added to, and cumulative with the Phase I percentage reduction targets.

As mentioned under item four in our comments, PennFuture supports annual consumption reduction goals for the next phase of Act 129 to continue at the rate of 1% savings per year. This would equal a required additional incremental reduction of 7,330 GWh by May 31, 2018. Under the Commission's proposed model for adopting additional required incremental reductions, these targets would be expressed as a cumulative savings goal of 5% in 2015 and 8 % in 2018. These targets would include the previous 3% reduction target from Phase I.

#### Contracts with Conservation Service Providers

Another transitional issue that the Commission should take into account is whether or not to permit EDCs to extend existing contracts with Conservation Service Providers (CSPs). PennFuture believes it is in the best interest of the EE&C programs to allow for EDCs to stay with existing CSPs if they feel they are performing well. Providing for existing contracts to continue will enable

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<sup>19</sup> Optimal Energy, Inc., *Pennsylvania 2013 – 2018 Energy Efficiency Goals*, 2011.

EDCs to spend less time and money on issuing additional requests for proposals. This will promote the seamless transition of well-performing Act 129 programs to the next phase.

## **8. Other Act 129 Program Design Issues**

### Energy Benchmarking

Energy benchmarking is a valuable tool that enables building owners to better understand their energy consumption and compare it to a standard to see how it is performing. Providing owners with this knowledge incents action to improve energy performance that can lead to a higher adoption of energy efficiency and conservation measures. Benchmarking in turn benefits the EDCs by increasing participation and enhancing the delivery of their Act 129 programs.

PennFuture recommends that the Commission direct EDCs to automate the transfer of electricity usage data for non-residential buildings directly into a benchmarking system, like EPA's Portfolio Manager. A number of utilities across the country have programs in place to provide 12 months of data to help customers use EPA's tool, including ComEd, MidAmerican, National Grid, NSTAR, PG&E, SDG&E, Sacramento Municipal Utility District, Southern California Edison, We Energies, and Xcel Energy.<sup>20</sup> Having EDCs automate the data transfer helps to eliminate the need for manual data entry by the customer which can create a barrier to participation.

### Improvements to Total Resource Cost Test

In order to facilitate the ability of EDCs to capture deeper savings in the next phase of Act 129, changes will need to be made to the Total Resource Cost (TRC) test. In relation to whole building programs it is important that the Commission allow for the inclusion of fossil fuel and water savings as a benefit in the TRC test. Certain efficiency measures have provable and easily quantifiable fossil fuel and water savings in addition to their electricity savings. These savings are real, tangible monetary benefits that occur as a direct result of the efficiency programs and should therefore be included in the TRC test. Without these benefits, shell measures like windows and insulation, to name a few, will typically not pass the test. While it is the policy of the Commission to apply the TRC test at the plan level rather than at the component, program, or measure level, it may become harder for full EE&C plans to pass this test as a larger portion of programs go after

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<sup>20</sup> National Action Plan for Energy Efficiency, *Utility Best Practices Guidance for Providing Business Customers with Energy Use and Cost Data*, ICF International, 2008.



deeper, more expensive savings. It will therefore become increasingly important to capture all the benefits of an energy efficiency measure.

Further, the Commission has already ruled that customer avoided operating and maintenance costs should be included as a TRC benefit even though it does not fall specifically under the umbrella of “avoided monetary cost of supplying electricity”. It is inconsistent to allow for operation and maintenance savings to be included as benefits in the TRC test but not allow for fossil fuel or water savings to count. Pennsylvania is one of very few jurisdictions that does not allow these benefits to be included in its cost-effectiveness tests. This is true even for states and utilities that only run electric programs (see Appendix A).

### EDC Participation in PJM Market

PennFuture recommends that the Commission encourage EDCs to bid their qualifying energy efficiency resources into the PJM Reliability Pricing Model (RPM) capacity auction. Since May 2009, PJM has allowed energy efficiency resources to bid into the RPM auction and receive capacity payments if cleared. These payments can provide a valuable revenue stream that can go back into Act 129 programs.<sup>21</sup> Baltimore Gas and Electric in Maryland is participating in the RPM auction in this manner as well as the majority of the utilities in Massachusetts that bid into the ISO-New England capacity market.

The Commission has previously acknowledged the importance of EDC participation in this market in its Opinion and Order on the *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan*, stating “it expects EDCs to take full advantage of savings made available from PJM programs”.<sup>22</sup> We hope the Commission will make this point clear as it moves forward with Phase II of Act 129.

### Performance Incentives

PennFuture encourages the Commission to examine the possibility of providing performance incentives to EDCs that exceed their Act 129 goals, so long as the funding comes from outside the 2% spending cap. While the penalties in Act 129 help to ensure EDCs meet their

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<sup>21</sup> Based on the measurement and verification requirements of PJM this will not create double counting.

<sup>22</sup> Pennsylvania Public Utility Commission Opinion and Order on *Petition of Duquesne Light Company for Approval of its Energy Efficiency and Conservation and Demand Response Plan, Approval of its Recovery of its Costs through a Reconcilable Adjustment Clause and Approval of Matters Relating to the Energy Efficiency and Conservation Plan*. Public Meeting held October 22, 2009. Docket No. M-2009-2093217

required savings goals, there is little incentive for EDCs to go further and procure all available cost-effective energy efficiency under the spending cap. The issue being that, energy efficiency results in lower kWh sales to customers, which in turn reduces an EDC's net revenues. In addition, while EDCs can earn a rate of return on investments in infrastructure improvements they are not afforded the same on their investments in energy efficiency. Performance incentives are one tool to address these issues. To date there are 18 states with some form of performance incentive in place.<sup>23</sup>

There are several ways to implement performance incentives and we would encourage the EDC to look to other states for appropriate models. For example, one model is to allow EDCs to retain a pre-determined percentage of the net resource benefits (avoided energy and capacity costs minus utility program costs and installed measure costs) from the portfolio of energy efficiency programs if they exceed their goals by a certain percentage. Another model would be to allow EDCs to earn a rate of return on energy efficiency investments equal to other capital investments, if they exceed their goals.

If the Commission moves forward with a performance incentive it is critical that it is based on sound performance metrics and verified energy savings to ensure there was no gaming or cream skimming by the EDC to obtain the incentive. Such metrics can include a demonstration that savings were achieved by encouraging a variety of energy efficiency measures in all customer classes.

### Net-to-Gross

In Phase I of Act 129, the Commission directed utilities to research appropriate net-to-gross (NTG) ratios to use when determining the cost-effectiveness of future modifications of existing programs. However, the Commission ruled that NTG ratios will not be used to determine whether utilities met their energy and demand reduction targets.

In the next phase of Act 129, PennFuture urges the Commission to reverse this decision and rule that net savings be used to determine compliance. NTG ratios are important in determining what portion of program-reported gross savings is from freeriders and spillover, and thus how much of the savings is truly attributable to the ratepayer funded efficiency program. Savings goals based on gross savings create a perverse incentive for utilities to focus too much of their effort on

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<sup>23</sup> Hayes, Sara, Steven Nadel, Martin Kushler, and Dan York, American Council for an Energy-Efficient Economy (ACEE), *Carrots for Utilities: Providing Financial Returns for Utility Investments in Energy Efficiency*, 2011.

promoting technologies such as basic CFLs, which save a lot of energy and are highly cost-effective, but that are now being widely adopted in the marketplace and therefore have high freerider rates. Conversely, consideration of spillover and related market effects may provide an incentive for the EDCs to more aggressively support emerging technologies and to help accelerate the commercialization of these and other measures that would have little penetration in the market otherwise, leading to better program design.

## APPENDIX A: TOTAL RESOURCE COST TEST COMPARISON

Source: Optimal Energy, Inc., *Pennsylvania 2013 – 2018 Energy Efficiency Goals*, 2011.

|                       | Type of test<br>(1) | Discount Rate   | DRIPE    | Externalities Included (Risk,<br>Emissions, etc.)  | Emissions<br>Compliance<br>Costs? | O&M<br>benefits | Water / Fossil<br>Fuel |
|-----------------------|---------------------|---|----------|--|-----------------------------------|-----------------|------------------------|
| Vermont(2)            | SCT                 | 5.7% (Real)   | No       | 10% and about \$0.045 per<br>kWh(3)                | Yes                               | Yes             | Yes                    |
| Massachusetts<br>(4)  | TRC                 | Yield from 10 year treasury<br>note. Currently around 2%.                       | Yes      | Yes, LI Only (5)                                   | Yes                               | Yes             | Yes                    |
| Connecticut           | TRC                 | After-tax cost of capital (6)   | Yes (7)  | No   | Yes                               | Yes             | Yes                    |
| Rhode Island (8)      | TRC                 | 7.00%   | Yes      | No   | Yes                               | Yes             | Yes                    |
| Maine (9)             | TRC                 | Yield from long-term US<br>treasury (10 years or more).<br>Currently around 2%. | No       | To the extent they can be<br>reasonably quantified | Yes                               | Yes             | Yes                    |
| California (10)       | TRC                 | Weighted average cost of<br>capital (11)  | Yes (12) | \$12.50/ton in 2008 and rising<br>(12)             | Yes                               | Yes             | Yes                    |
| New Jersey (13)       | TRC                 | Weighted average cost of<br>capital   | No       | No   | Yes (14)                          | Yes             | Yes                    |
| Ohio (17)             | TRC                 | ???   | No       | No   |                                   | Yes             | No                     |
| Ontario (18)          | TRC                 | After tax cost of capital   | No       | No   | Yes                               | Yes             | Yes                    |
| Oregon (19)           | SCT                 | 5.20%   | No       | 10% Risk Adder and \$15/ton<br>carbon              | Yes                               | Yes             | Yes                    |
| New York<br>State(20) | TRC                 | 5.5% (21)   | No       | \$15/ton   | Yes                               | Yes             | Yes                    |
| Pennsylvania<br>(15)  | TRC                 | Weighted average cost of<br>capital (16)  | No       | No (16)  |                                   | Yes             | No                     |

### Sources

(1) See; "Savings Energy Cost-effectively: A National review of the Cost of Energy Saved through utility sector EE programs", ACEEE, Sept 2009, Report No. U092

(2) Efficiency Vermont Annual Plan 2009-2011. [http://www.encyvermont.com/docs/about\\_efficiency\\_vermont/annual\\_plans/EVT\\_AnnualPlan2009-2011.pdf](http://www.encyvermont.com/docs/about_efficiency_vermont/annual_plans/EVT_AnnualPlan2009-2011.pdf)

(3) 10% Risk Adder to EE resources. Also a current environmental externality value of 4.5 cents per kWh.  
[http://www.narucpartnerships.org/Documents/krolewski\\_int\\_res\\_planning\\_en.pdf](http://www.narucpartnerships.org/Documents/krolewski_int_res_planning_en.pdf)

(4) MA DPU Order 08-50-A. <http://www.ma-eeac.org/docs/DPU-filing/08-50-A%20Order.pdf>

(5) No environmental externalities may be added without legislative approval, but utilities are instructed to include the future costs of compliance with any state and federal regulations. There are externalities allowed for Low Income programs.

(6) 2010 CL&M Final Decision. Has been lower in the past, but Department will require a rate of no lower than 7% for 2011.

(7) 2008 CL&M Final Decision. Allows the inclusion of DRIPE, but needs to be separated out for reporting purposes.

(8) Rhode Island Energy Efficiency and Resources Management Council: Opportunity Report - Phase 1. [http://www.rieermc.ri.gov/documents/OER-EERMC-OpportunityRept\(7-15-08\).pdf](http://www.rieermc.ri.gov/documents/OER-EERMC-OpportunityRept(7-15-08).pdf)

(9) Efficiency Maine. 94-078. Chapter 2. <http://www.encymaine.com/docs/AgencyRules/Chapter2Update.pdf>

(10) California: <ftp://ftp.cpuc.ca.gov/puc/energy/electric/energy+efficiency/ee+policy/resource4.pdf>

- (11) EE Policy: <http://docs.cpuc.ca.gov/efile/rulings/77462.pdf>
- (12) Avoided cost Rulemaking: [http://docs.cpuc.ca.gov/PUBLISHED/FINAL\\_DECISION/45284-03.htm#P245\\_42105](http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/45284-03.htm#P245_42105)
- (13) Conversation with Frank from CEEEP. August 11th.
- (14) New Jersey has recently dropped out of RGGI. However compliance costs from NOx, Sox, and other regulations are still included in the TRC.
- (15) Pennsylvania Public Utility Commission. Docket No. M-2009-2108601. Final Order 2011 Total Resource Cost Test Order. July 28, 2011.
- (16) Pennsylvania Public Utility Commission. Docket No. M-2009-2108601. Implementation of Act 129 of 2008 - Total Resource Cost Test.
- (17) Ohio Cod 4901. <http://codes.ohio.gov/oac/4901%3A1-39>
- (18) Ontario [http://www.ontarioenergyboard.ca/documents/cases/EB-2008-0037/Board\\_Guidelines\\_for\\_CDM\\_20080328.pdf](http://www.ontarioenergyboard.ca/documents/cases/EB-2008-0037/Board_Guidelines_for_CDM_20080328.pdf)
- (19) Energy Trust of Oregon. 4.06.000-P Cost-Effectiveness Policy and General Methodology for Energy Trust of Oregon.
- (20) New York state. See DPS case 07-M-0548
- (21) Real Discount Rate. [http://www.dps.state.ny.us/07M0548/07M0548\\_Staff\\_Proposal\\_initial.pdf](http://www.dps.state.ny.us/07M0548/07M0548_Staff_Proposal_initial.pdf)