

**Case Studies from the Energy and Water Utility Sectors:  
The Business Case for Low-Income Bill Discounts**

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### Take-Away Lessons from Pennsylvania

- Starting in the 1990s, Pennsylvania state utility regulators approved low-income discount programs as “a more cost-effective approach for dealing with issues of customer inability to pay than...traditional collection methods.”
- The state determined that establishing these programs as “an integrated part of a [utility’s] rate structure” would be in the best interests of all ratepayers, not just program participants, as the programs would reduce the utilities’ total cost of service.
- Third-party program evaluations show significant improvements in collections from program participants and participants’ self-reported ease of paying their utility bills.

The rate affordability programs operated by Pennsylvania natural gas and electric utilities<sup>1</sup> for their low-income customers began more than 30 years ago with a small pilot project by Columbia Gas Company.<sup>2</sup> Since that time, the universal service concept<sup>3</sup> has expanded for

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<sup>1</sup> The Pennsylvania PUC’s Bureau of Consumer Services explains that the state’s customer assistance programs (CAPs) for electric and gas utility service:

are payment assistance and debt forgiveness programs for low-income households. CAPs are intended to provide more affordable monthly bills based on a set energy burden standard. CAP charges may take the form of a discounted price on actual usage on either all or a portion of the usage (also referred to as a “rate discount bill”), a percentage of the monthly bill (also referred to as a “percent of bill”) or a monthly amount that is calculated upon a percentage of the household income (also referred to as a “percent of income payment”). Percentage of income plans are correlated directly to the household’s income and the public utility’s energy burden targets. CAP’s debt forgiveness feature freezes a household’s unpaid past debt upon entry into the program. As long as the household remains current and timely on their CAP payments, the past debt is not collected and is forgiven in incremental amounts over time.

Pennsylvania PUC, Bureau of Consumer Services (BCS), Universal Service Programs and Collections Performance, 2021 (December 2022), at 2, [https://www.puc.pa.gov/media/2188/2021\\_universal\\_service\\_report\\_rev122722.pdf](https://www.puc.pa.gov/media/2188/2021_universal_service_report_rev122722.pdf). (hereinafter “Universal Service Programs (2021).”) The term “energy burden” refers to a household’s electric and gas utility costs as a percentage of household income.

While several of the Pennsylvania rate affordability programs are “percentage of income plans” (PIPs), not all are. Since their inception, additional utilities have converted their programs from discounts to a PIP. Most recently (2022 – 2023), the four FirstEnergy utilities converted their affordability programs to PIPs.

<sup>2</sup> Pennsylvania PUC v. Columbia Gas of Pennsylvania, R-891468, Final Order, at 150 – 160 (September 19, 1990) (hereafter Columbia Gas EAP Order).

Pennsylvania’s energy utilities so that the companies, in 2021, devoted nearly \$459 million to support their low-income customers.<sup>4</sup> While the genesis of the Pennsylvania universal service programs can be found in the Pennsylvania Public Utility Commission’s (PUC) generic authority over the operations of energy utilities, the preservation of those programs has since been written into statute.

Columbia Gas and Equitable Gas are two of the Pennsylvania utilities that pioneered the use of affordable rates to address the payment troubles experienced by low-income customers. Columbia Gas Company expressed a willingness to pursue a program first proposed by the state Office of Consumer Advocate (OCA). Equitable Gas Company also proposed an income-based rate for its low-income customer population.

### **The Columbia Gas of Pennsylvania Energy Assurance Program (EAP)**

The OCA proposed that Columbia Gas Company adopt an “Energy Assurance Program” (EAP) as part of Columbia’s 1990 rate case. According to the OCA, the issue was one of collection efficiency. “The issue in this proceeding,” the OCA said, “is not to devise a social response to the broad inability to pay problems of low-income households. The issue is one of what is the most cost-effective means of collection. It is the same issue as whether a utility should pursue new central station capacity, cogeneration or conservation. . .The requirement that utilities provide least-cost service should govern utility collection activities too.”<sup>5</sup> The OCA continued: “the issue is this: how can Columbia Gas most effectively and least expensively collect as much as possible from households [that] cannot afford to pay?”<sup>6</sup>

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<sup>3</sup> The term “universal service” is a term-of-art in Pennsylvania. The BCS explained in its most recent annual report on Universal Service Programs and Collections Performance that:

Universal Service is a collective name applied to the policies, protections and services that help low-income customers maintain electric and natural gas service and includes payment assistance programs, termination of service protections, energy reduction programs and consumer education. The Commission has made the Bureau of Consumer Services (BCS) responsible for monitoring and evaluating public utilities’ universal service programs. The goal in monitoring these programs is to ensure they increase the effectiveness of EDC [electric distribution company] and NGDC [natural gas distribution company] collections while protecting the public’s health and safety.

Universal Service Programs (2021), at 2 (citing Electricity Generation Customer Choice and Competition Act at 66 Pa. C.S.A. § 2803 and Natural Gas Choice Competition Act at 66 Pa. C.S.A. § 2202). There are four “universal service” programs in Pennsylvania: (1) the Low-Income Usage Reduction Program (LIURP) (energy efficiency); (2) the Customer Assistance Program (CAP) (rate discounts); (3) the Customer Assistance and Referral Evaluation Services (CARES) (referrals to external assistance); and (4) hardship funds. *Id.* at 2-3.

<sup>4</sup> *Id.* at 70, 71. Electric utilities’ universal service programs delivered benefits of \$315.2 million in 2021; natural gas utilities’ universal service programs delivered benefits of \$143.4 million in 2021.

<sup>5</sup> Columbia Gas EAP Order, at 152.

<sup>6</sup> *Id.* at 153.

The PUC agreed. The PUC found that “it is incumbent upon us to initiate a pilot project to test empirically some of the claims made by [OCA] for an EAP. Hopefully, the results of the pilot will prove [OCA’s] thesis that EAP will enable more customers to avoid termination and collection actions, while also reducing the uncollectible expense that can be anticipated if existing approaches remain unchanged.”<sup>7</sup> The PUC then articulated its philosophy that would govern Pennsylvania’s regulatory policy for the following decades:

We, in conjunction with utilities, and social service agencies, have all worked hard to devise ways to [e]nsure that low-income Pennsylvanians have utility services which really are necessities of life as the tragic fire deaths associated with the loss of utility service underlined. . .

However, for the poorest households with income considerably below the poverty line, existing initiatives do not enable these customers to pay their bills in full and to keep their service. . .Consequently, to address realistically these customers’ problems and to stop repeating a wasteful cycle of consecutive, unrealistic payment agreements that cannot be kept, despite the best of intentions, followed by service termination, then restoration, and then more unrealistic agreements, we believe that new approaches like PECO’s CAP program and the OCA’s proposed EAP program should be tried.<sup>8</sup>

Based on this analysis, the Commission directed Columbia Gas to begin a 1,000 customer pilot EAP.

### **The Equitable Gas Low-Income Rate**

Shortly after directing Columbia Gas to implement a pilot low-income rate affordability program, the PUC further approved a proposal by Equitable Gas Company to pursue a similar program.<sup>9</sup> Unlike the Columbia Gas program, which had been proposed by the OCA (and not opposed by the utility), the Equitable Gas program originated with the gas utility, itself.<sup>10</sup> According to Equitable Gas, the proposed program was:

Needed to (1) remove these customers from the discouraging and expensive collection cycle, (2) motivate them to increase conservation, (3) increase their

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<sup>7</sup> Id. at 158.

<sup>8</sup> Id. at 159.

<sup>9</sup> Pennsylvania PUC v. Equitable Gas Company, Docket No. R-901595, Final Order, at 63 – 74 (November 21, 1990). (hereinafter “Equitable Order”).

<sup>10</sup> Equitable Gas had been working with the state Bureau of Consumer Services (BCS), a bureau of the state utility commission, to develop an appropriate program design. Equitable Order, at 63.

annual participation in available funding assistance programs, and (4) encourage consistent bill-payment efforts.<sup>11</sup>

The Equitable Gas program was, at first, disapproved by the hearing examiner who decided the rate case. While the program is “an apparently well-intentioned attempt to assist those of Equitable’s ratepayers who most need assistance in paying their bills,” the hearing examiner “concluded that this Commission is without authority to approve a program such as the EAP.” The hearing examiner reasoned that if the commission “were to approve the subject [energy affordability] program, our action would be tantamount to authorizing a utility to collect money from one group of ratepayers and to use that money for another group of ratepayers for a reason completely unrelated to the ratemaking process (the subsidization of low-income individuals who are unable to pay their utility bills).”<sup>12</sup> The hearing examiner finally concluded that “neither judicial precedent nor the Public Utility Code discuss our statutory authority for the implementation of utility rates based solely on ‘ability to pay.’”<sup>13</sup>

The PUC, however, reversed the hearing examiner’s disapproval of the proposed Equitable Gas low-income program. Noting that “we are aware that this Commission’s main function in ratemaking is to assure that every rate made, demanded, or received by any public utility shall be just and reasonable,” the commission found that the Pennsylvania statute prohibits only *unreasonable* preferences or advantages to any person. The statute, the commission said, prohibits any *unreasonable* difference as to rates between classes of service.<sup>14</sup> “The relevant question, therefore, is whether or not the funding of Equitable’s proposed [energy affordability] program results in the ‘unreasonable’ rate discrimination prohibited by the Public Utility Code.”<sup>15</sup>

According to the Pennsylvania commission, “a mere difference in rates does not violate” the Pennsylvania statute.<sup>16</sup> The commission then found, on a number of bases, that “the record in this proceeding clearly demonstrates that any ‘preference’ that EAP would yield to program participants is reasonable, and further, the creation of EAP is in the best interest of all Equitable ratepayers, not just program participants.”<sup>17</sup>

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<sup>11</sup> Id. at 63.

<sup>12</sup> Id. at 66.

<sup>13</sup> Id.

<sup>14</sup> Id. at 69 (emphasis in original).

<sup>15</sup> Id. at 69.

<sup>16</sup> Id. at 70.

<sup>17</sup> Id. at 70.

The commission found that the program cost would be substantially less than the uncollectible expense associated with the program participants. Customers that are eligible for the Equitable Gas program “who currently have payment arrangements either negotiated by BCS [the Bureau of Consumer Service] or the Company pay on average little more than 50 percent of the presubscribed amount.” The PUC found that:

This analysis suggests that the \$1.8 million future test year [program] expenses should result in an overall reduction to the Company’s cost of service, through its uncollectible expense and savings in credit and collection expenses.<sup>18</sup>

In sum, the PUC said that “we commend Equitable for taking the initiative to propose the [energy affordability] pilot. This program could make it one of the leaders among utilities in the uncollectible arena.”<sup>19</sup>

### **The Permanent Pennsylvania Low-Income Affordability Programs**

Only two years after initiating the Columbia Gas pilot, the PUC decided to expand the use of universal service programs to the state’s other natural gas and electric distribution utilities.<sup>20</sup> Consistent with its view of the function of such programs as expressed in the early Columbia Gas decision, the policy decision of the PUC was that low-income rate affordability programs were a necessary tool for utilities to use in combating the problem of nonpayment. Indeed, the decision to implement what would become known as Pennsylvania’s Customer Assistance Programs (CAPs) arose out of the PUC’s investigation into the control of uncollectible accounts.<sup>21</sup> Through that investigation, the PUC’s Bureau of Consumer Services (BCS) had developed recommendations for implementation of CAPs.

The PUC adopted a Policy Statement on Customer Assistance Programs, finding that:

CAPs provide alternatives to traditional collection methods for low-income, payment troubled customers. Generally, customers enrolled in a CAP agree to

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<sup>18</sup> Id. at 71.

<sup>19</sup> Id. at 73.

<sup>20</sup> The PUC directed that utilities adopt pilot projects. The PUC decision was based on the BCS recommendation that CAP pilots “should be large enough to provide some relief to the low-income, payment-troubled customer problem and at the same time small enough that changes can be made to the programs without incurring major costs.” Bureau of Consumer Service, Final Report on the Investigation of Uncollectible Balances, Docket No. I-900002, at 115 (February 1992) (hereafter BCS Uncollectibles Report). The Commission directed that pilot programs were to involve either 1,000 customers or 2% of a company’s residential customer base, whichever was greater.

<sup>21</sup> In the Matter of the Investigation into the Control of Uncollectible Accounts, Docket No. I-900002 (initiated October 11, 1990).

make monthly payments based on household family size and gross income. These regular monthly payments, which may be for an amount that is less than the current bill, are made in exchange for continued provision of utility service.<sup>22</sup>

The PUC continued:

As a result of our investigation, the Commission believes that an appropriately designed and well implemented CAP, as an integrated part of a company's rate structure, is in the public interest. To date, few utilities have implemented CAPs. The purpose of this Policy Statement is to encourage expanded use of CAPs and to provide guidelines to be followed by utilities who voluntarily implement CAPs. These guidelines prescribe a model CAP which is designed to be a more cost-effective approach for dealing with issues of customer inability to pay than are traditional collection methods.<sup>23</sup>

In sum, while preservation and expansion of the CAP programs was eventually written into statute, the Pennsylvania CAP programs were initiated by the PUC without explicit statutory authorization, based on a finding that CAPs should be an "integrated part of a company's rate structure." The purpose of these programs, the PUC found, was not a social purpose. Rather, the CAPs represent "a more cost-effective approach for dealing with issues of customer inability to pay than are traditional collection methods."

The focus of the Pennsylvania CAPs as a tool to respond to low-income payment troubles has continued throughout the years. CAPs were considered to be an *alternative* to a way of doing business that simply wasn't working. The objective of CAPs was "to stop repeating a wasteful cycle of consecutive, unrealistic payment agreements that cannot be kept, despite the best of intentions, followed by service termination, then restoration, and then more unrealistic agreements. . ." <sup>24</sup>

### **Periodic Independent Third Party Evaluations**

Pursuant to PUC directives, each Pennsylvania utility operating a CAP retains an independent third party to prepare a periodic evaluation of the operation and outcomes of its universal service

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<sup>22</sup> Policy Statement on Customer Assistance Programs (CAP), Docket No. M-00920345, at 2 (July 2, 1992).

<sup>23</sup> Id. at 2. This Commission decision was supported by the BCS Final Report, which indicated: "The Bureau's position is that ratepayers are already bearing significant costs attributable to the problems of payment troubled customers and uncollectible balances. Further, BCS believes that incorporating the following recommendations into utility operations will lead to a more rational and cost-effective use of existing resources. Over time, proper implementation of the recommendations may result in a reduction of total utility costs." BCS Uncollectibles Report, at 120.

<sup>24</sup> Columbia Gas EAP Order, at 159.



programs. The independent evaluation results for six Pennsylvania gas and electric distribution utilities are presented in Table 1 below. The evaluation results span a number of years, indicating that these results are not a function of any particular external factor that may have existed in a particular year. The results include four electric utilities and two natural gas utilities.

The results presented in Table 1 show the total “bill payment coverage ratio” for participants in the various low-income Pennsylvania CAPs. The bill payment coverage ratio places dollars of payments in the numerator and dollars of bills in the denominator to determine the percentage of bills that have been paid. The Table makes two comparisons. First, the Table shows the bill payment coverage ratio for the year before participants enrolled in CAP along with the bill payment coverage ratio for the first full year of CAP participation. Second, the Table shows the percentage change for CAP participants (pre-CAP vs. in-CAP) compared to the “net change” relative to a low-income comparison group. The net change subtracts the change within the comparison group from the change in the CAP participant group. If the bill payment coverage ratio for the CAP participants improved by 15%, for example, and the payment coverage ratio for the comparison group improved by 3%, the net change for CAP participants is 12%. In contrast, if the payment coverage ratio for CAP participants improved by 15%, and the payment coverage ratio for the comparison group declined by 3%, the net change for the CAP participants is 18%. The “net change,” in other words, is the change for CAP participants relative to what their change would have been had they been in the comparison group.

The three FirstEnergy utilities (Metropolitan Edison; Penn Power; Penelec) did not have pre-CAP data or comparison group data presented in their program evaluation. FirstEnergy’s evaluation presented only the in-CAP bill payment coverage ratios.

Table 1 shows that implementation of Pennsylvania’s CAPs resulted in significant improvements in bill payment performance for low-income program participants, resulting in payment coverage ratios consistently between 90% and 100% (or more) for participating low-income customers.<sup>25</sup> Setting aside UGI (electric) as an outlier (UGI also has a natural gas division the program for which was not included in UGI’s evaluation),<sup>26</sup> the lowest in-CAP payment coverage ratio was 92% (Duquesne Light heating, an increase from 75%; and Philadelphia Gas Works, an increase from 72%). The smallest improvement in payment coverage ratios (considering only the pre-versus post-participation data) was 15% (PPL), and that increase was from 84% prior to CAP participation to 98% during CAP participation.

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<sup>25</sup> When customers pay more than 100% of their bill, they are not only paying their bill for current service, but they are also retiring some of their arrearage as well.

<sup>26</sup> For purposes here, UGI (electric) will be referred to simply as “UGI.”

Table 1. Total Bill Payment Coverage Ratios Low-Income Customer Assistance Program (CAP) Participants				
	Test Year Enrollees			Net Change Relative to Comparison Group
	Pre-CAP	In CAP	Change	
PGW (2019) <sup>27</sup>	72%	92%	20%	36%
PPL (non-htg) (2020) <sup>28</sup>	84%	98%	15%	21%
PPL (heating) (2020) <sup>29</sup>	83%	104%	21%	26%
Peoples Gas (2017) <sup>30</sup>	85%	123%	39%	36%
First Energy (ME) (non-htg/htg) <sup>31</sup>	NA	91% / 93%	NA	NA
First Energy (PN) (Non-htg/htg) <sup>32</sup>	NA	91% / 119%	NA	NA
First Energy (PP) (non-htg/htg) <sup>33</sup>	NA	100% / 98%	NA	NA
UGI (electric) (2012) <sup>34</sup>	60%	66%	5%	18%
Duquesne Light (non-htg) (2015) <sup>35</sup>	77%	94%	17%	31%
Duquesne Light (htg) (2015) <sup>36</sup>	75%	92%	17%	23%

Insights into the reason for the improved payment patterns can be derived from the data presented in Table 2 below, derived from the same independent third-party evaluations of the low-income programs. This Table reports data on the ease or difficulty of bill payment reported

<sup>27</sup> APPRISE, Inc. (March 2019). Philadelphia Gas Works Universal Service Programs Impact Evaluation, Final Report, available at <https://www.puc.pa.gov/pcdocs/1614503.pdf> (last accessed March 3, 2022).

<sup>28</sup> APPRISE, Inc. (January 2020). PPL Electric Utilities Universal Service Programs, Final Report, available at <https://www.puc.pa.gov/pcdocs/1656535.pdf> (last accessed March 3, 2022).

<sup>29</sup> Id.

<sup>30</sup> APPRISE, Inc. (August 2017). Peoples Natural Gas 2017 Universal Service Program, Evaluation, Final Report, available at [https://www.puc.pa.gov/General/pdf/USP\\_Evaluation-Peoples.pdf](https://www.puc.pa.gov/General/pdf/USP_Evaluation-Peoples.pdf) (last accessed March 3, 2022).

<sup>31</sup> APPRISE, Inc. (January 2017). FirstEnergy Universal Service Programs, Final Evaluation Report, available at [https://www.puc.pa.gov/general/pdf/USP\\_Evaluation-FirstEnergy.pdf](https://www.puc.pa.gov/general/pdf/USP_Evaluation-FirstEnergy.pdf) (last accessed March 3, 2022).

<sup>32</sup> Id.

<sup>33</sup> Id.

<sup>34</sup> Apprise, Inc. (July 2012). UGI Utilities, Inc. – Gas Division and UGI Penn Natural Gas, Inc. Universal Service Program, Final Evaluation Report available at [https://www.puc.pa.gov/general/pdf/USP\\_Evaluation-UGI.pdf](https://www.puc.pa.gov/general/pdf/USP_Evaluation-UGI.pdf) (last accessed March 3, 2022).

<sup>35</sup> APPRISE, Inc. (July 2015). Duquesne Light Universal Service Programs, Final Evaluation Report, available at [https://www.puc.pa.gov/general/pdf/USP\\_Evaluation-Duquesne.pdf](https://www.puc.pa.gov/general/pdf/USP_Evaluation-Duquesne.pdf) (last accessed March 3, 2022).

<sup>36</sup> Id.

by low-income customers before participating in the discount program and while participating in the discount program.<sup>37</sup>

When taking into consideration the performance of each comparison group, even UGI's performance demonstrates the role played by the CAP in improving bill payment. While the improvement within the participant group (pre-participation vs. in-participation) was 5%, UGI (electric)'s net change relative to its comparison group was 18% (meaning that while performance improved within the participant population, payment performance declined by 13% in the comparison group). The net improvement in bill payment coverage ratios relative to the comparison groups ranged from roughly 20% to more than 35% amongst the various evaluations.

The difference that the low-income programs make is evident at both ends of the spectrum of bill payment difficulty (or ease). The Table shows that for each utility, there was a substantial decline in the percentage of program participants who reported finding it "very difficult" to make their bill payments. In addition, for each utility, there was a substantial increase in the percentage of program participants who reported finding it "not at all difficult" ("very easy") or "not too difficult" ("somewhat easy") to make bill payments during program participation.

- For PPL, while 63% reported finding it very difficult to make bill payments before program participation, only 3% reported it being very difficult after enrolling in CAP. In contrast, while 5% reported it being not at all difficult (very easy) to make bill payments before program participation, 34% reported it being not at all difficult after enrollment. Similarly, the change in the percentage reporting it being "somewhat easy" ("not too difficult") increased from 10% prior to program participation to 47% after program enrollment.
- For Peoples Gas, while 58% reported finding it very difficult to make bill payments before program participation, only 5% reported it being very difficult after CAP enrollment. While 4% reported it being "very easy" ("not at all difficult") to make bill payments before program participation, and 5% reported it being "somewhat easy" ("not too difficult") before program participation, 34% said it was "very easy," and 47% said it was "somewhat easy" to make bill payments after enrollment.

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<sup>37</sup> Not all utility evaluations undertook this data collection and analysis.

Table 2. Difficulty of Low-Income Customers in Making Bill Payments  
(Pennsylvania Gas and Electric Distribution Utilities)

	PPL (2020)		Peoples Gas (2017)		First Energy (2017) (combined, ME, PP, PN)		UGI (electric) (2012)		Duquesne (non-heating & heating) (2015)	
	Before PIP	In PIP	Before PIP	In PIP	Before PIP	In PIP	Before PIP	In PIP	Before CAP	In CAP
Very difficult	63%	3%	58%	5%	56%	13%	67%	7%	49%	2%
Somewhat difficult	19%	16%	30%	25%	35%	23%	22%	35%	38%	8%
Somewhat easy/Not too difficult	10%	47%	5%	35%	4%	36%	6%	33%	9%	53%
Very Easy/Not at all difficult	5%	34%	4%	33%	3%	26%	0%	26%	1%	36%
Don't know	2%	0%	1%	1%	1%	1%	5%	0%	2%	1%
Refused	0%	0%	2%	1%	1%	1%	0%	0%	0%	0%
Total	99%	100%	100%	100%	100%	100%	100%	101%	99%	100%

- For the FirstEnergy utilities, while 56% reported it being very difficult to make bill payments before program participation, 13% reported it being very difficult to make bill payments after enrollment. In contrast, while 3% said it was “very easy” (“not at all difficult”), and 4% said it was “somewhat easy” (“not too difficult”) to make bill payments before program participation, those numbers increased to 26% and 36% respectively after program enrollment.

Similar results were found for both UGI (electric) and Duquesne Light. The percentage of low-income customers finding it “very difficult” to pay their bills before program participation dropped from 67% to 7% for UGI (electric), and from 49% to 2% for Duquesne Light. The percentage of low-income customers who reported finding it “very easy” (“not at all difficult”) to pay their bills increased from 0% to 26% for UGI (electric) and from 1% to 36% for Duquesne Light. The percentage who reported it being “somewhat easy” (“not too difficult”) increased from 6% to 33% for UGI (electric) and from 9% to 53% for Duquesne Light.

### Take-Away Lessons from Philadelphia

- Setting rates so that they are affordable to low-income customers improves the percentage of bills that the water utility collected.
- The improved collections rates from low-income customers participating in a rate discount program will generate an increased stream of revenue to the utility relative to low-income customers not participating in a discount program.
- Setting rates so that they are affordable to low-income customers accelerated the timeliness of payments by customers receiving an affordable bill.
- Given the reduced collection rate as arrearages age, improving the timeliness of payments by low-income customers through the offer of an affordable rate will improve the long-term collection of revenue.

In the Fall of 2015, the City of Philadelphia became the first major urban center to adopt a water affordability program structured on percentage of income principles. Legislation directing the establishment of the program was adopted unanimously by the Philadelphia City Council on November 19, 2015.<sup>39</sup> Initially, the Philadelphia program was titled the Income-based Water Rate Affordability Program ("IWRAP"). IWRAP opened for business on July 1, 2017.<sup>40</sup> In implementing the IWRAP legislation, the Philadelphia Water Department (PWD) began to refer to the program as the "Tiered Assistance Program" (TAP). In the discussion below, the IWRAP terminology is used *only* when directly quoting from the original legislation. Otherwise, the operational name (TAP) is used. The two terms, however, refer to the same program.

Philadelphia's legislation provides that: "monthly IWRAP bills shall be affordable for low-income households, based on a percentage of the household's income. . ."<sup>41</sup> Each low-income

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<sup>38</sup> This case study is an overview of the Philadelphia Income-based Water Rate Affordability Program (IWRAP), known operationally as the Tiered Assistance Program (TAP). The regulations of the Philadelphia Water Department governing the TAP can be found at the Philadelphia Water Department Regulations, Sections 206.0, et seq. (2022). <https://water.phila.gov/pool/files/pwd-regulations-chapter-2.pdf>.

<sup>39</sup> Bill No. 140607-AA, amending Philadelphia Code, §19-1605, adopted by the City Council on November 19, 2015, signed by the Mayor on December 1, 2015, <http://files.amlegal.com/pdf/Philadelphia/140607-AA.pdf>.

<sup>40</sup> Information regarding the PWD TAP can be found in the various PWD rate cases litigated before the Philadelphia Water, Sewer and Storm Water Rate Board since 2016. A complete record for those rate cases can be accessed at: <https://www.phila.gov/departments/water-sewer-storm-water-rate-board/rate-proceedings/>.

<sup>41</sup> Philadelphia Code, Section 19-1605(3)(a) (2017), [https://codelibrary.amlegal.com/codes/philadelphia/latest/philadelphia\\_pa/0-0-0-298516](https://codelibrary.amlegal.com/codes/philadelphia/latest/philadelphia_pa/0-0-0-298516).

customer's bill, the legislation directed, shall be "based upon each Customer's actual income" and "shall be charged in lieu of the Department's service, usage, and stormwater charges."<sup>42</sup> The following major policy decisions are incorporated into this statutory language:

- Bills "shall be affordable." The purpose of the Philadelphia legislation, in other words, was not merely to provide "some" level of discount to low-income customers. There is, instead, a legislatively-mandated outcome. The level of discount must result in an *affordable* bill for low-income customers. This policy works in two ways. First, if a customer has a lower income (or a higher bill), the amount of assistance should be increased to reflect the increased dollars needed to make a bill affordable. Second, if a customer has an affordable bill without assistance, the customer does not receive a discount merely because he or she is "poor." The bill assistance, in other words, should be an amount that is sufficient, but only that amount which is sufficient, to make a bill affordable.
- Affordability is to be "based on a percentage of the household's income." Affordability, in other words, was not some vague concept included in the legislation. Instead, Philadelphia specifically mandated that affordability was to be determined as a function of a "percentage of income."
- Affordability is to be "based upon each Customer's actual income." According to the Philadelphia City Council, in other words, affordability was not to be determined "on average" or on a City-wide basis. Affordability was not to be based on some estimated or imputed income. Rather, pursuant to the legislation, affordable PWD's low-income bills are to be determined based upon "each customer's actual income."
- The Philadelphia legislation made clear that the affordable bills charged pursuant to the TAP legislation were "in lieu of" the water, wastewater and stormwater charges otherwise charged to residential customers. "Timely payment of his or her monthly IWRAP bill," the legislation provides, "shall satisfy all of a customer's current water liabilities, so that there is no addition to his or her arrears."<sup>43</sup>
- Finally, the legislation was intended to be comprehensive. It was designed to cover all aspects of "water" bills charged to residential customers, including water, wastewater and stormwater charges.

TAP is offered to four tiers of low-income customers. For TAP participants with income at or below 50% of Federal Poverty Level (FPL), bills are capped at 2% of monthly income; at 51% to

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<sup>42</sup> Id., Section 19-1605(3)(a).

<sup>43</sup> Id., Section 19-1605(3)(d).

100% of FPL, bills are capped at 2.5% of income, while at 101% to 150% of FPL, bills are capped at 3%.<sup>44</sup> Customers who have income above 150% of FPL and also have a “special hardship” receive bills that are capped at 4% of income.<sup>45</sup>

The Philadelphia legislation also directly addresses the treatment of arrearages that had been incurred by low-income customers before those customers entered TAP.<sup>46</sup> The legislation recognizes that collection efforts by the Philadelphia Water Department are based on total bills, not on whether a customer’s arrears were incurred before or after the effective date of the water affordability program. Moreover, the City Council recognized, it was not only *possible*, but indeed it was *likely* that low-income customers would have incurred arrears before TAP was created. Accordingly, the Philadelphia legislation mandates that “low-income customers who are enrolled in IWRAP shall be required to make no additional payment in respect to any pre-IWRAP arrears to maintain service.”<sup>47</sup> In fact, the legislation explicitly provides that “earned forgiveness of arrearages shall be available under such terms and conditions as are adopted by regulation.”<sup>48</sup> PWD adopted regulations providing for earned forgiveness of pre-TAP debt over a 24-month period, conditioned upon complete payments of a TAP bill.<sup>49</sup>

As of January 2023, there were 15,032 active TAP participants.<sup>50</sup> Together, these TAP enrollees had approximately \$39.2 million in arrears at the time of enrollment.<sup>51</sup> Throughout 2023 and beyond, TAP enrollment has been rising significantly.<sup>52</sup>

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<sup>44</sup> Under the TAP legislation, bills are not *set* at an affordable percentage of income. Rather, they are *capped* at an affordable percentage of income. A program participant’s bill will be the lowest of: i) a percentage of income bill, ii) the customer’s actual bill at standard residential rates, or iii) the customer’s bill under any other PWD discount program for which the customer may be eligible. (PWD has certain other discount programs, such as a 25% senior discount. Participants who are eligible for those programs can receive a bill lower than TAP would provide. The legislation creating TAP requires PWD to screen TAP applicants for eligibility for all programs and place them into whichever program(s) they qualify for that will achieve the lowest bill for that customer.)

<sup>45</sup> “Special Hardship” is more particularly defined by PWD regulation: “A hardship condition that may include, but is not limited to, the following: (i) an increase in the Customer’s number of dependents in the household; (ii) a seriously ill household member; or; (iii) circumstances that threaten the household’s access to the necessities of life if payment of a delinquent bill is required.” PWD Regulations, Section 206.1(k). “Applicants for enrollment in TAP due to a Special Hardship condition must demonstrate a Special Hardship condition within the prior twelve (12) months.” *Id.*, Section 206.2(a)(2)). For Special Hardship customers whose income is greater than 150% of FPL, the TAP bill “will be calculated at 4% of the Customer’s Monthly Household Income.” *Id.*, Section 206.4(b).

<sup>46</sup> Determining the net financial impacts of TAP’s arrearage credit component is beyond the scope of this discussion.

<sup>47</sup> Amended Philadelphia City Code, Section 19-1605(3)(h) (2017).

<sup>48</sup> Amended Philadelphia City Code, Section 19-1605(3)(h)(i) (2017).

<sup>49</sup> PWD Regulations, Section 206.7(e). The arrearage forgiveness Regulation provides:

If the Customer fails to make a full TAP Bill payment, the Customer will not receive forgiveness for that month; however, the Customer will remain eligible for forgiveness of Pre-TAP arrears the next time that the Customer makes a full TAP Bill payment. The Customer may recover any missed months of forgiveness by paying full TAP Bill amounts for those missed months.

<sup>50</sup> In the Matter of the Philadelphia Water Department’s Proposed Changes in Water, Wastewater and Stormwater Rates and Related Charges, For Fiscal Years 2024 – 2025, Philadelphia Water Department Response to Public Advocate data request Set I, No. 56, 2/27/2023 (hereinafter “PWD Response to Data Request”) (avail. at



The face value of the TAP discount (i.e., the bills at standard residential rates minus the bills at the TAP discount rate) is collected from all remaining PWD ratepayers via a bill surcharge. Since costs may vary based not only on the number of TAP participants, but on the distribution of TAP participants between income ranges as well, PWD’s TAP costs are subject to an annual “reconciliation” through a “TAP Rider” reviewed by the Philadelphia Water Rate Board.<sup>53</sup> This mirrors the funding method for Pennsylvania’s natural gas and electric universal service programs.<sup>54</sup>

Within the total context of setting rates, however, PWD has been directed to take into account the additional revenue generated by improving the collectability of bills tendered to low-income customers. In PWD’s 2023 rate case, the Water Rate Board determined that PWD would collect nearly \$5 million in additional revenue through its TAP program beyond that revenue it would have collected in the absence of the program.

### **The Philadelphia Program Collection Experience**

Before the Philadelphia City Council adopted the new low-income discount, water affordability had been an ongoing issue facing residents of Philadelphia. According to a White Paper by the Water Center at the University of Michigan, “between April 2012 and January 2018, unpaid bills and water debt affected over 40 percent of Philadelphia’s households. Twenty percent of all

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<https://www.phila.gov/media/20230303151010/Public-Advocate-Discovery-Set-I-2023.02.27-FINAL.pdf> and <https://www.phila.gov/media/20230303151659/Response-PA-I-56.xlsx>.

<sup>51</sup> In the Matter of the Philadelphia Water Department’s Proposed Changes in Water, Wastewater and Stormwater Rates and Related Charges, For Fiscal Years 2024 – 2025, Philadelphia Water Department Response to Public Advocate data request Set I, No. 15, 2/27/2023 (hereinafter “PWD Response to Data Request”) (avail. at <https://www.phila.gov/media/20230303151010/Public-Advocate-Discovery-Set-I-2023.02.27-FINAL.pdf> and <https://www.phila.gov/media/20230303151659/Response-PA-I-56.xlsx>).

<sup>52</sup> By the end of 2023, TAP enrollment had increased to 21,694 participants. PWD, “Quarterly Report To the Rate Board as Required by the FY2024-2025 Rate Determination,” Jan. 18, 2024, p. 1 <https://www.phila.gov/media/20240123114327/Quarterly-Report-to-Rate-Board-FY24Q2.pdf>. PWD continues to work on increasing enrollment through data sharing with other agencies. This approach allows PWD to “pre-qualify” customers and automatically enroll them in TAP, based on household income data those customers have submitted to other agencies to qualify for other social service programs. PWD projects that this process alone will add 34,000 new TAP participants in 2024. Id. at 8.

<sup>53</sup> The Philadelphia City Council established the independent Water Rate Board to evaluate PWD’s proposed changes in water rates and charges. The Water Rate Board has final decision making authority on proposed rates and charges, subject to appeal in state court. See University of Michigan Water Center, “Reimagining the Water Rate-Setting Process in Philadelphia,” accessed March 15, 2024, <https://graham.umich.edu/media/pubs/Water-CS-Reimagining-the-Water-Rate-setting-Process.pdf>.

<sup>54</sup> Pennsylvania PUC, Customer Assistance Programs: Funding Levels and Cost Recovery Mechanisms, Docket No. M-00051923, October 19, 2006. (For Pennsylvania’s investor-owned water and wastewater utilities, the costs of universal service programs are also recovered through rates, but in a slightly different manner, via base rates rather than a surcharge. Pennsylvania PUC vs. Aqua Pennsylvania, Docket No. R-2021-R-3027385, Opinion and Order, at 311 – 320, May 12, 2022.

household accounts, 86,000 customers experienced at least one shutoff, and 40,000 households were eligible for shut offs as of May 2017. For the Philadelphia Water Department, unpaid bills and water debt represent[ed] over \$242 million in uncollected revenue.”<sup>55</sup>

***Increasing total revenues:*** The net collections impact of the TAP discount takes into consideration the revenue impact to the utility as a whole from offering the rate discount.

In PWD’s 2023 rate case, the hearing officer found that the FY22 collectability rates for three different populations were: (1) 34.3% for non-TAP low-income customers; (2) 72.5% for TAP participants, and (3) 84.13% for all customers (excluding “stormwater-only” customers).<sup>56</sup> As explained in the rate decision and summarized below, these differing collectability rates account for two ways in which the TAP discount program financially benefits PWD.<sup>57</sup>

First, the dollars of TAP discount do not “disappear” when they are not billed to TAP participants. The rate decision explained that, when low-income customers enroll in TAP, PWD is taking a portion of billings (i.e., the amount of the TAP discount) that it would otherwise be collecting at a rate of 34.3% from those customers and instead billing those dollars through the TAP Rider to customers as a whole. In so doing, it collects those dollars at the much higher collectability rate of customers as a whole (84.13%) (excluding stormwater-only customers). The Water Rate Board found that, at FY24 rates, this factor alone will result in a \$4.927 million increase in revenue actually collected, as compared to what PWD would collect by billing those same dollars to low-income customers without TAP.

Second, the Water Rate Board found that, by providing discounts to TAP participants, PWD *also* collects an increased percentage of the revenue that it bills to those low-income customers. In FY22, while low-income customers paid 34.3% of their bills before receiving a discount, they paid 72.5% of their bills after receiving their discount. The Water Rate Board found that, at FY24 rates, the 38.2% improvement in collectability (72.5% - 34.3%) would generate a \$3.988 million increase in revenue collected, as compared to what PWD would collect by billing those same dollars to low-income customers without TAP.<sup>58</sup>

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<sup>55</sup> University of Michigan Water Center, “Water Affordability Based on Income: The Tiered Assistance Program in Philadelphia,” accessed March 15, 2024, [https://graham.umich.edu/media/pubs/Water-CS-Philidelphia-Tiered-Assistant-Program\\_0.pdf](https://graham.umich.edu/media/pubs/Water-CS-Philidelphia-Tiered-Assistant-Program_0.pdf).

<sup>56</sup> In the Matter of the Philadelphia Water Department’s Proposed Changes in Water, Wastewater and Stormwater Rates and Related Charges, For Fiscal Years 2024 – 2025, at 55 (May 30, 2023) (hereinafter “Hearing Officer Report”) (avail. at <https://www.phila.gov/media/20230530162301/2023-Hearing-Report-May-30-FINAL-with-Appendix.pdf>), *affirmed* Philadelphia Water, Sewer and Stormwater Rate Board, Rate Determination, at 24 (June 21, 2023) (avail. at <https://www.phila.gov/media/20230623151204/2023-General-Rate-Proceeding-Rate-Determination-2023-06-22.pdf>).

<sup>57</sup> Hearing Officer Report, at 54-57.

<sup>58</sup> *Id.*, at 57.

**Improving the timeliness of payments:** In addition to receiving a higher percentage of payments from its low-income customers, PWD improved the timeliness of its payments as well. For example, a complete payment that is made on-time is considered to be an improved payment performance when compared to a complete payment that is made 60 days late. Similarly, a complete payment made 30-days late is an improved payment performance when compared to a complete payment made 120 days late.

In looking at the question of bill payment timeliness for TAP participants, the metric used below examines the percentage of bills paid at different points in time. TAP data is available for Fiscal Year 2018 through Fiscal Year 2022. The two measurement points are: (1) 12-months; and (2) 24-months. The data are set forth in Table 3 below. The comparisons examined involve TAP participants (who, by definition, are low-income) and low-income TAP non-participants.

Table 3 shows a substantial improvement in the timeliness of payments by TAP participants (in comparison to low-income TAP non-participants). Data for low-income TAP non-participants are included for FY12 through FY17 even though no TAP program existed in those years. The data from these pre-TAP years are presented for informational purposes.

The most important years to examine in Table 3 are FY18 (the first year of TAP operation) through FY22. FY22 is included even though, because of its recent nature, it has collections data only for twelve months.

A consistency in the improved timeliness of payments by TAP participants is seen at both the 12-month and 24-month marks. At the 12-month mark for each year (FY18, FY19, FY20, FY21, FY22), TAP participants out-performed the non-TAP low-income (“non-TAP LI”) customers. In FY22, for example, the 12-month TAP collection rate was 38.2% higher than the low-income non-participant collection rate (72.50% - 34.3%). In FY21, the 12-month TAP collection rate (72.5%) was 26.4% higher than the low-income non-participant collection rate (46.1%). In FY20, the 12-month TAP collection rate (72.8%) was 26.9% higher than the low-income non-participant rate (45.9%).

Table 3. Timeliness of Bill Payment (TAP and Non-TAP Low-Income [LI])<sup>59</sup>

	Percent Paid in 0 – 12 Months		Percent Paid in 0 – 24 Months	
	TAP	Non-TAP LI	TAP	Non-TAP LI
FY22	72.50%	34.30%	N/A <sup>60</sup>	N/A
FY21	72.47%	46.12%	83.83%	62.64%
FY20	72.80%	45.92%	87.13%	59.45%
FY19	72.03%	48.71%	87.89%	61.80%
FY18	73.13%	36.06%	95.69%	45.12%
FY17	No TAP <sup>61</sup>	42.74%	No TAP	54.80%
FY16	No TAP	45.96%	No TAP	59.69%
FY15	No TAP	45.63%	No TAP	59.77%
FY14	No TAP	46.62%	No TAP	61.36%
FY13	No TAP	49.68%	No TAP	64.15%
FY12	No TAP	46.27%	No TAP	60.24%

The improved timeliness of payments continued through the second year of collections. In FY21, for example, while 83.8% of TAP bills had been collected by the 24-month mark, only 62.6% of non-TAP low-income bills had been, a difference of 21.2%. In FY20, while 87.1% of TAP bills had been collected by month 24, only 59.4% of low-income non-participant bills had been, a difference of 27.7%. In FY20, collections from TAP participants at the 24-month mark exceeded collections from low-income non-participants by 26.1% (87.9% vs. 61.8%).

A different way to look at the timeliness of TAP bill payments is to begin with the TAP collectability at a point in time and to review the pre-TAP collectability to see how long it took TAP-eligible low-income customers to achieve that same collectability outcome in the years prior to the implementation of TAP. The TAP collectability outcomes that will be considered are set forth in Table 4 below (the data being taken from Table 3 immediately above).

<sup>59</sup> In the Matter of the Philadelphia Water Department’s Proposed Changes in Water, Wastewater and Stormwater Rates and Related Charges, For Fiscal Years 2024 – 2025, Philadelphia Water Department Response to Public Advocate data request Set I, No. 15, 2/27/2023 (hereinafter “PWD Response to Data Request”) (avail. at <https://www.phila.gov/media/20230303151010/Public-Advocate-Discovery-Set-I-2023.02.27-FINAL.pdf> and <https://www.phila.gov/media/20230303151719/Response-PA-I-15.xlsx>).

<sup>60</sup> 24 months have not elapsed since FY 2022 and thus two-year data is not available.

<sup>61</sup> TAP began in July 1, 2017 (Fiscal Year 2018).

TAP FY	TAP	TAP	TAP	TAP	TAP	TAP	TAP	TAP
18: 1- Year	FY19: 1-Year	FY20: 1-Year	FY21: 1-Year	FY22 1-Year	FY-18: 2-Years	FY19: 2-Years	FY20: 2-Years	FY21: 2 Years
73.1%	72.0%	72.8%	72.5%	72.5%	95.7%	87.9%	87.1%	83.8%

These one-year and two-year collection rates for TAP participants can then be compared to the collection rates for TAP-eligible (low-income) customers in years *before* TAP was implemented. The cumulative collectability at annual measuring points is presented in Table 5 below.

	0 – 12 Mos	13 – 24 Mos	25 – 36 Mos	37 – 48 Mos	49 – 60 Mos	61 – 72 Mos	73 - 84 Mos <sup>64</sup>	85 - 96 Mos	>96 Mos
FY17	42.74%	54.80%	58.12%	61.33%	64.08%	69.17%	--	--	--
FY16	45.96%	59.69%	64.53%	66.80%	69.26%	71.20%	75.02%	--	--
FY15	45.63%	59.77%	65.74%	69.49%	71.30%	73.16%	74.77%	77.80%	--
FY14	46.62%	61.36%	67.60%	72.17%	75.07%	76.42%	77.72%	78.97%	81.54%
FY13	49.68%	64.15%	69.74%	74.25%	77.77%	79.90%	80.97%	81.97%	82.98%
FY12	46.27%	60.24%	65.19%	69.30%	72.85%	75.57%	77.26%	78.14%	78.98%

What can be seen from a comparison of the two Tables is that:

- The two-year TAP collectability of 87.90% (FY19) was never reached in pre-TAP years. The closest was Fiscal Year 2013, in which pre-TAP low-income customers had paid 82.98% of their bills, but took more than 96 months to achieve that. Similarly, the two-year TAP collectability of 83.83% (FY21) was never achieved in the pre-TAP years. Again, the closest was the FY13 collections after 96 months of 82.98%.
- In contrast, the one-year TAP collectability rates ranged from a low of 72.03% (FY19) to a high of 73.13% (FY18). These collection rates were achieved in the pre-TAP years. However, the lowest TAP one-year collection rate (72.03% was not achieved until Year 4

<sup>62</sup> PWD Response to Data Request, Set I, No. 15.

<sup>63</sup> PWD Response to Data Request, Set I, No. 15.

<sup>64</sup> Cells for which there is no data represent aging buckets for which insufficient time has elapsed since billing to reach that aging bucket. For dollars billed in FY17, by FY19, which is the last year for which data is reported, there have only been 36 months to collect. The 37 – 48 month bucket, in other words, has not yet been reached.

(37 - 48 months) at the earliest (FY13), and not until Year 7 (73 – 84 months) at the latest (FY16). In FY16, in other words, it took TAP-eligible (low-income) customers 84 months (i.e., 7 years) to pay the same percentage of their bill that TAP participants had paid in their first year of TAP participation.

The improved timeliness of payments resulting from offering the TAP discount is important because, as the Table immediately above demonstrates, as arrears age, it becomes less and less likely that a utility such as PWD will ever collect those dollars. In the Table above, for example:

- While PWD increased the collection of its FY17 billings by 12.06% in Months 13-24 (as compared to Months 0-12) (54.80% minus 42.74%), it increased its collections by only an additional 3.32% in Months 25-36 (compared to Months 13-24) (58.12% minus 54.80%). In Months 48 – 60, it collected only an additional 2.75% of its original billings.
- Similarly, while PWD increased the collection of FY16 billings by 13.73% in Months 13-24 (as compared to Months 0-12) (59.69% minus 45.96%), it increased its collections by only an additional 4.84% in Months 25-36 (compared to Months 13-24) (64.53% minus 59.69%).
- While PWD increased its collections of FY15 billings by 14.15% in Months 13-24 (compared to Months 0 – 12) (59.77% minus 45.63%), it increased its collections by only an additional 5.96% in Months 25-36 (compared to Months 13-24) (65.74% minus 59.77%); by an additional 3.75% in Months 37-48 (69.49% - 65.74%); and by an additional 1.81% in Months 49 – 60 (71.30% - 69.49%).

The PWD data confirms, in other words, the commonly held belief that as arrears age, it becomes increasingly less likely that those arrears will ever be collected. In each of the pre-TAP years, as can be seen from the Table above, incremental collections from low-income customers substantially decreased after Month 24, and virtually disappeared after Month 60.

Improving the timeliness of payments from low-income customers provides important benefits to the water utility in at least two important ways. First, from a revenue perspective, as arrearage become older, the likelihood that they will ever be collected declines. For example, collecting a bill on or before Day 60 after billing, rather than on or after Day 180, improves the odds that the bill will be collected at all. Second, for every month that elapses after a bill is rendered, but before a bill is collected, the utility will incur a carrying cost (whether in the form of borrowing costs or in the form of a lost opportunity cost). Collecting a bill in 60 days, in other words, imposes a lesser expense to the utility than collecting a bill in 180 days.