Utility Billing Impacts of Community Solar

Options for Demonstration Pilots

May 2016

Findings

- The Solar Market Pathways Cook County Community Solar project team was tasked with identifying possible bill crediting options for community solar demonstration pilot projects in Cook County.

- Options include manual and semi-automated manual bill crediting, a full Customer Information Management System (billing system) upgrade and integrating third-party technologies with the existing CIMS system.

- Commonwealth Edison (ComEd) is exploring a billing system upgrade, but no sooner than 2018. Because this upgrade will happen after the initial pilot projects are expected to be online, an interim solution is required.

- For this reason, only manual bill crediting and third-party software solutions are viable for pilot projects.

- Manual and semi-automated manual on-bill crediting can be implemented immediately by modifying the existing process for Net Energy Metering (NEM). However, it may not be cost effective or scalable.

- ComEd indicated it would bear the cost of manual bill crediting for pilots as part of ComEd Operation Costs.

Findings

- Requirements need to be more fully defined and discussed with ComEd to better assess viability and costs for each option.

- Options for automating on-bill crediting, whether through a billing system upgrade or third-party solution, must consider time frame, implementation/annual cost, and IT system interface with the utility.

- Quantifying a number of these key components is not possible without a much deeper dive into the implementation and product research process, so cannot be included in this analysis.

- However, some general assumptions can be included to help better understand a viable solution for bill crediting demonstration pilots.

	Bill Credit Options	Implementation Cost	Annual Fee (per project)	IT Cost
A	Manual	$0	$80,400	$0
B	Semi-automated Manual	TBD	$8,000	$0
C	3rd Party Bill Crediting Technologies	$75,000-$200,000—cost across all pilots	$4,000-$10,000	TBD
D	Billing System Upgrade	TBD	TBD	$0

No assumption or recommendation is made in this document with regard to how (or who) bill credit costs are paid.

Bill Credit Solution Roadmap

Option:	A	B	C	D$_1$	D$_2$
	Manual Solution	Semi-Automated Manual	**Third Party Solution**	**Modify Existing Systems to Support Automated Bill Crediting**	**Install New Systems to Support Automated Bill Crediting**
Anticipated Time Frame	Immediate	Immediate	Near Term	Long Term	Long Term
Management Responsibility	Utility	Utility	Third-Party	Utility	Utility
Key Solution Features	• System owner sends subscriber information and manually calculates credits and send to utility • Host account & subscriber credits manually calculated • Bills manually adjusted and mailed out	• System owner sends subscriber information and manually calculates credits and send to utility • Host account & subscriber credits calculated semi-automatically • Bills manually adjusted and mailed out	• Third-party develops customized on-bill crediting solution • Solution integrates with utility IT systems • Bill crediting process outsourced to third party or managed by utility	• Existing billing systems, customer information systems, and other related IT systems are modified to support automated bill crediting	• Existing billing systems, customer information systems, and other related IT systems are replaced with systems that can support automated bill crediting

Current ComEd Billing Process

- Working with ComEd, the project team defined the current bill crediting process used for NEM and possible modifications available for a community solar pilot program.

- The current process for billing customers is, generally, <u>automated.</u>

- However, the current process for billing solar accounts (net metering) is <u>manual.</u> Note: ComEd is in the final stages of automating the calculation of NEM accounts for projects that reside behind the customer meter. This would reduce the annual fee for the manual process significantly.

- Modifying the current manual process was deemed available for the pilot program since there is no IT interface requirement, which would add additional cost and time.

Option A: Manual Bill Crediting Pilot Assumptions

- Each project has 1 host with 1 revenue-grade meter and up to 300 separate subscribers.

- Subscribers are residential customers with fixed energy charges that are credited at a fixed rate. Note: data processing cost for RES-supplied customers is not included in the manual bill credit cost.

- Developers (or third-party owner/manager) would compute the bill credits by customer—i.e., the dollar amounts (not net energy) to be credited to customers based on their share of actual generation—and submit them to ComEd Operations each month.

Option A: Manual Bill Crediting Costs

- 3 ComEd FTEs are involved in monthly process
  - FTE_1: 4 hours to calculate the host account credit amount = 4 hour/month
  - FTE_2: 4 hours to validate the host account credit amount = 4 hour/month
  - FTE_3: 15 minutes per subscriber to manually adjust a bill = (15 min x 300 subscribers) =75 hours/month
- Fully-loaded* annual compensation for FTE_1 is $100/hour, FTE_2 is $75/hour, and FTE_3 is $80/hour (*full-loaded includes benefits and admin costs)
- Total annual cost: ((4 hours/month x $100/hour) + (4 hours/month x $75/hour) + (75 hours/month x $80/hour)) = $80,400 per community solar project.
- ComEd indicated that for the purposes of these pilots, it would include the cost of manual bill crediting as part of ComEd Operation Costs.

Option B: Semi-Automated Manual Bill Crediting

- ComEd is in the final stages of automating the calculation of NEM credits for projects that reside behind the customer meter.

- This partially automated process cam be adapted for community solar subscribers.

- The semi-automation would result in significantly less FTE hours than a fully manual process – the estimated cost is approximately $8,000 per month.

- This process can be implemented to coincide with the launch of pilots.

- ComEd indicated that for the purposes of these pilots, it would include the cost of semi-automated manual bill crediting as part of ComEd Operation Costs.

Option C: Third Party Billing Solutions

- Several vendors provide bill crediting software for community solar projects: Clean Energy Collective, SunShare, Tendril, Project Economics, West Monroe Partners and others.

- Software costs include implementation and annual license fees. One-time implementation costs for all projects vary significantly depending on vendor and options. These can range from $75,000-$200,000 or more.

- Annual license fees vary, as well, based on volume and features. For our base assumptions we have assumed $4,000-$10,000 per year.

- Additional costs internal to ComEd are required to integrate the third-party technology with their billing system for customer billing. These will also vary significantly based on features and complexity, and are more difficult to estimate; these estimates are not included in this analysis.

- Should these pilots move past a near-term manual bill credit process, implementation costs would be allocated across all community solar pilot projects in the program, while the annual licensing fee would be incurred by each project. Thus, if costs were allocated over 5 pilot projects of 300 subscribers each, the per project cost would be approximately $40,000 for implementation, with an average annual license fee of about $7,500.

Option D: Billing System Automation Upgrade

- As indicated earlier, ComEd is exploring a billing system upgrade, but no sooner than 2019.

- system will include features that allow for full automation of important processes that will better enable automation of

- Actual timing and costs for the upgrade cannot be determined or assumed at the time of this analysis because of the scope and complexity.