A Model Cost Sharing Proposal

Introduction

The risk of paying for substation-level interconnection upgrades continues to hold back the development, construction, and financing of Distributed Energy Resources (DERs) in New York. First-mover projects facing the towering cost of a upgrading a substation cannot be financed, even if such a project could afford to pay its pro rata share of the upgrade. In addition, the current paradigm misses an important opportunity to fully engage the State's utilities as partners in facilitating the transition to a more distributed, nimbler electric grid.

The existing cost-sharing mechanism as adopted in the *Order Adopting Interconnection Management Plan and Cost Allocation Mechanism, and Making other Findings* of January 25, 2017 (hereafter CS1.0) attempted address this problem by allowing first moving projects who bear 100 percent of the cost to be reimbursed by subsequent projects benefiting from those upgrade. However, CS1.0 still places 100% of the cost and risk of upgrading the shared electric grid on individual developers without a mechanism to provide assurance that subsequent projects will be built within a meaningful timeframe for financing partners. Under these circumstances, the first-moving interconnecting customer develops and finances the project as if the cost-sharing mechanism were not available. As a result, the first mover problem remains -- because no one project can risk paying the entire cost of a new substation, no DERs are constructed in that distribution-saturated area, even if each project could afford pay its pro rata share. In addition, this CS1.0 mechanism still places sole responsibility for financing the upgrades that are needed to facilitate the state's clean energy goals squarely on the shoulders of private developers, as opposed to engaging the electric utilities in facilitating these goals through targeted distribution upgrades.

In addition, CS 1.0 is only applicable to substation level upgrades, as described below. Given the significant increase in complexity and challenge that would result from the inclusion of distribution modifications in the next iteration of this mechanism, continuing to focus on substation level upgrades appears appropriate at this time, with the understanding that further work will be done at the IPWG to discuss the evolution of this mechanism as the market and DG saturation levels change.

National Grid's Distributed Generation Interconnection REV Demonstration Project provides an innovative way to overcome the collective action problem posed by distribution infrastructure upgrades and to better engage the electric utilities in building out the distribution upgrades that are needed to achieve the state's clean energy goals. Through this initiative, National Grid has proactively installed several 3V0 substation upgrades in an attempt to draw DER development and interconnection activity. While this program has been successful, and is due to be expanded in the future, it alone is not sufficient to address the first mover dilemma, as it is restricted to sites and substations chosen unilaterally by National Grid. Additional benefits could be unlocked by building on National Grid's pilot project and incorporating the additional

elements below:

1. Starting with the proactive installation strategy being piloted National Grid
2. Adjust the site selection for upgrade process so that it is based on signals from the DER market
3. In these target areas, the electric utility would initially provide the capital to upgrade the site, with reimbursement provided by interconnecting customers on a pro-rata basis as under CS1.0.
4. In cases where the full upgrade costs are not reimbursed by interconnecting customers within a reasonable period of time, the electric utility would be entitled to recover the unrecovered costs from it's rate base under the same terms (including an allowed rate of return) as the utility is allowed to recover for other distribution upgrades. .

Purpose

The overarching purpose of this proposed cost sharing mechanism is to engage the electric utilities in proactively upgrading the electric grid to facilitate the deployment of DERs, by lowering the financing risk associated with substation-related interconnection costs. This approach will:

1. Remove the "first-mover" burden on an Interconnecting Customer
2. Provide certainty to both the first in queue and all subsequent queued interconnecting customers as to the cost substation upgrades for which they will be responsible.
3. Provide to the JU a mechanism for their both recovering the initial expense of design and constructing the system modifications required, while providing a reasonable return to compensate them for taking on the initial risk of substation upgrades to facilitate DER deployment.

Proposal

A. **Types of Upgrades Affected**

In line with CS1.0, this mechanism is to be applicable to the following upgrades that cost $250,000 or more:

1. Substation 3V0 installation;
2. Substation transformer upgrades; and
3. Other substation-level shared upgrade.

Nothing shall prevent an Interconnecting Customer from opting out of the cost sharing mechanism and making full payment on the required upgrades in the event that they wish to expedite the utility's design and construction.

B. Site Selection

Existing interconnection queues and development activity should be used to signal market interest in a particular region and substation. As part of the CESIR, the utility will consider the number of projects in queue to determine whether interconnecting all known projects will require one or more the the upgrades described above. Where a substation upgrade is forecast to be needed, the cost-sharing mechanism described herein shall apply.

B. **Project Profiles To Be Considered in Site Selection and Eligible for the Cost Sharing Reimbursement Mechanism**

1. Projects must be 200kW AC or greater in size, or projects that in aggregate are 200kW AC or greater, proposed by the same developer, within a 6 month period.
2. Developer defined as in CS1.0, “the entity that submitted the interconnection application. A single developer includes all legal entities associated or affiliated with a given company, including subsidiaries, LLCs, etc.”[1]

C. **Study Process**

As part of the CESIR, when the determination is made that one or more of the above upgrades are to be required as a result of the interconnection of the proposed DER, the cost and total increase in hosting capacity resulting from the installation of that upgrade will be determined by the Utility and included in the CESIR. The calculated cost of the upgrade to be shared shall include a reasonable fee charged to the interconnecting customer to cover services provided by the utility for administrative overhead and participation in the CS2.0 mechanism.

For the triggering project and each project that follows on that feeder, the prorated portion of substation upgrade cost is calculated (in their CESIR) based of their AC system size and the total increase in hosting capacity.

At the time the triggering interconnecting customer, or any higher queued interconnecting customer that would also trigger the same upgrade, makes their 25% payment, the Utility will provide notification to the developer community (via IOAP or other TBD method) that a cost sharing opportunity is available at a particular substation. This notice will include the specific upgrade contemplated, the total increase in capacity from that upgrade, and the amount of that increase in capacity already allocated.

D. **Utility Design and Construction Mobilization Threshold**

The utility will begin design and construction of the substation upgrade when 100%

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payment has been made for an aggregate amount of DER equal to or greater than 50% of the increase in capacity resulting from that substation upgrade. Notwithstanding these aggregate payments having been made, the existence of an official moratorium in the town or county on the development of DER shall prevent the utility from being required to mobilize for design and construction. This reduces the risk that the substation upgrades would result in unallocated capacity.

Example:

Project A (3MW AC) is proposing to interconnect a PV DER to a feeder which connects to substation One (a 20MVA nameplate substation). At the time that Project A obtains its queue position there is 1MW of remaining capacity available at substation One, after which, due to existing interconnected and queued DG at substation One, Project A breaches the threshold used to determine the necessity for 3V0.

Engineering analysis determines that the installation of 3V0 at substation One increases the *available* DG capacity (as measured at the time of Project A's entry into the queue) from 1MW to 13MW. The cost as 3V0 is determined to be $500k, with a per kW allocated cost of $41.66 ($500k/12,000kW)

Project A's CESIR includes the above information, and indicates (in addition to any distribution upgrade cost) a shared cost of $83,333.00 for 3V0 (3MW AC size of Project A-1MW of existing available capacity X the per/kW cost)

At the time Project A (or any subsequently queued project sharing in the benefits of the substation upgrade) makes their 25% payment per the rules in the SIR the Utility will notify the developer community via the IOAP of the cost sharing opportunity and its current status (increase in capacity, approximate cost per kW, portion of which is paid for if applicable)

The utility will mobilize for design and construction of the substation upgrade once full 100% has been made by one project, or a number of projects, whose aggregate shared capacity equals 50% of the increase resulting from the substation upgrade. In this case, once 6MW of increase in capacity is paid for, the utility shall begin design and construction. In addition, the utility would assess a reasonable fee to each project to cover the administrative costs associated with facilitating the cost-sharing and reimbursement.

Notes for further discussion:

Nothing shall prevent an interconnecting customer from making full payment for the required upgrade in the event that it wishes to expedite the utility's design and construction. It is worth considering as well whether to allow a customer to make only the 50% threshold payment, to be reimbursed by subsequent interconnecting customers.

There is a risk (though the developer community believes it to be rather small) of the utility having stranded capital for an extended period of time in the form of unreimbursed expenses where sufficient interconnecting projects do not make their 100% payments within a reasonable period of time. In this case, a reasonable period of time should be established, after which the utility would be entitled to recover unreimbursed costs from its rate base. An accounting mechanism should be used to track reimbursements and to reduce future cost recovery in cases where the utility is reimbursed by subsequent projects after initially recovering its unreimbursed costs.

Recent anecdotal evidence indicates that there are circumstances in which long term planned upgrades are initially unaccounted for in CESIR, with revised CESIRs to be deliver at a later date taking into account these utility plans. Incorporating the investigation of capital plans and how they affect the cost to the interconnecting customer ought to be a more formal part of the CESIR process.

The possibility that a cost sharing mechanism may be impacted by non-SIR projects may need to be addressed in this mechanism. As the scope of this proposal is not sufficient to address any cross queue coordination between SIR projects and NYISO projects, it would be challenging to address this issue fully. For the purpose of this mechanism, it may be necessary to include language that both precludes projects interconnecting to substations, where there is a subsequently submitted NYISO project at the substation bus, from participating in cost sharing. In the event that there is a previously submitted NYISO project at the substation bus that were instigating system modification that would otherwise be included in this cost sharing mechanism then any existing rules would apply.

Though the current SIR rules do not allow for the placing of a project on hold after full payment has been made, practically speaking there are some instances where projects are making full payment only to cancel their project and receive a full refund later down the line. In order to prevent the utility from mobilizing for design and construction of substantial sub station modifications, after the 50% threshold has been reached, only to have all or a portion of the threshold payments refunded, it will be necessary to put in place a mechanism addressing this issue. As a suggestion, it could be required that at the time the 75% payment is made for a cost shared system modification, the interconnecting must indicate if they wish for their payment to contribute towards the cost sharing threshold. In the event that they choose for it to do so, they would be abdicating their right to immediate refundability and would be required to wait until the complete funding of the system modification by other parties prior to the receipt of their refund.

Finally, some of the JU have made comments that the inclusion of an additional check point aside from the 50% threshold may be warranted to prevent the mobilization of design and construction in the event that local permitting/zoning challenges are preventing projects from moving forward. Aside from official moratoria as described in the SIR preventing the instigation of this mechanism, industry believes that 100% payment having been made by an interconnecting customer is sufficient signal of developmental maturity.