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February 25, 2016

Emily Mann
Assistant Program Manager – East Coast Operations
SunEdison, LLC
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**Subject: Solar Array Decommissioning
Titcomb Landfill, Amesbury, Massachusetts**

Dear Emily:

Per the City of Amesbury Zoning Bylaw (Section XI.S 5.11 and 5.12) a decommissioning plan for solar facilities and some form of financial surety (either through escrow, bond or otherwise) for the costs of decommissioning must be approved by the Planning Board prior to approval of a Site Plan Review. This letter provides a description of the decommission tasks and an estimate of costs to implement decommissioning at the proposed Titcomb Landfill solar PV system to its previous state as a closed landfill. The approximately 3.3MW_{DC} project will be developed in one construction phase. The following analysis and cost estimates are proportional to the total megawatts installed.

PROPOSED PV SYSTEM EQUIPMENT		
Component / Activity	Quantity	Unit
Site Grading	1.4	Acre
Seeding	~1	Acre
Chain Link Fence	3,010	LF
PV Modules	9,860	Each
Switchgear / Disconnects	1	Lump Sum
Inverters / Transformers	2	Each
Disconnects, DC & AC	2	Each
Combiner Boxes	24	Each
Concrete Pads	3	Each
Concrete Ballasts	1,171	Each
Racking System Panels	548	Each
AC/DC Wire/Conduit	1	Lump Sum

The scope of work includes permitting a modification to the existing MassDEP Post Closure Use Permit (PCUP) and the removal, recycling and disposal of system components. The cost estimate for permitting and disposal requirements are based on current costs and regulations. The majority of equipment and materials are recyclable. Labor, equipment and repair of the landfill vegetative layer and drainage swales (if/as necessary) represents the majority of the costs.

Assumptions:

- System equipment including inverters, transformers and switchgear to be removed from their respective concrete pads and recycled or returned to their manufacturer for processing.
- Chain-link fencing and associated ballast blocks to be removed and sold or recycled.
- PV modules to be recycled.
- Racking system to be cut, stacked and recycled.
- Concrete tub ballasts to be recycled.
- All concrete will be recycled or removed.
- AC and DC wiring that can be disconnected and removed from equipment and earth will be consolidated for recycling.
- On site power poles and medium voltage wiring shall be removed.
- Landfill cap vegetative layer repair and off-cap grading/backfilling/compaction of disturbed areas.
- Reseeding of vegetative layer where impacts occurred.

Schedule is estimated to be 4-6 weeks of MassDEP permitting and 3-4 weeks of site time with a crew of 8 at an average labor cost using Worcester County Prevailing Wage Rates. Future cost is based on 2.5% annual escalator (Compound Amount Factor) for the expected 25 year useful life of the system.

ESTIMATED DECOMMISSIONING COSTS		
Component / Activity	2016 Cost	2041 Cost
Permitting	\$15,000	\$27,800
Labor Cost	\$73,000	\$135,400
Loam, Seed and Fill	\$10,300	\$19,100
Equipment and Shipping	\$23,500	\$43,600
Scrap Value	(\$50,600)	(\$93,800)
Net Total:	\$71,200	\$132,100



If you have any questions, concerns or comments please contact me at #978.656.3609 or rjackson@trcsolutions.com.



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Program/Project Manager

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