From: Sean Fogarty <sfogarty77@verizon.net>
Sent: Monday, January 7, 2019 8:49 AM
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Cc: Wanda Parrish; Patrick White; Alexandra Spaulding; Dave Hammond
Subject: Decommissioning follow-up from Jan 2nd PC public hearing
Attachments: recycling cost emails.docx; Decommissioning articles.docx

Commissioners,

I'm following up on the Planning Commission discussions at the Jan 2nd Public Hearing on sPower's decommissioning plan and associated costs/bond.

Summary (details below):

1) Recycling of panels cost $$. The decommissioning cost estimate should be at least $50 million. sPower's numbers are unrealistic and don't reflect the current market.

2) Remediation of soils are not included in sPower's decommissioning plan. Required by ordinance and critical to returning the property to its zoned usage (A-3). sPower's plan (no soil remediation) would result in conversion of this property into defacto permanent industrial use regardless of the actual zoning designation.

3) The county should not wait until the Site Plan phase (per latest Staff Report) to require sPower to submit a satisfactory decommissioning plan. SEF ordinance requires it: "The planning commission shall not recommend, nor shall the board of supervisors approve, the proposed special use unless it satisfies the following standards…"

For background, sPower submitted a revised decommissioning plan dated 12/13/18. However, the Plan's Conceptual Cost Estimate (Attachment A) is dated 11/15/18 which is 12 days prior to the Dewberry report's release. The Dewberry report is dated 11/26/18 and was released by the County on 11/27/18. Obviously sPower's revised Conceptual Cost Estimate did not take into account the Dewberry recommendations. In fact only three changes were made to the Conceptual Cost Estimate as compared to the version from May 2018. This has been sPower's consistent approach to only answer the questions they'd prefer to answer as it relates to decommissioning (as required in County ordinance 23-4.5.7). The County staff has been diligent in their insistence that sPower comply with the ordinance and staff's concerns.

The purpose of the decommissioning bond is to protect the county if/when the site is being abandoned. Replacing panels to extend the life of the facility might make good business sense in the future but is not relevant to the decommissioning bond. Decommissioning will occur when it is no longer economic to operate and maintain the facility – for whatever reason. The company that owns it (whether sPower or another entity) is no longer making money and they can't find another buyer for the asset so it must be shutdown. The bond ensures that the decommissioning will be done properly. If the company going out of business does not have a big enough bond to

cover the costs, then they are likely to just walk away - the LLC structures allow for streamlined corporate decision making in this instance. The site then becomes the county's problem and expense. In this case, a large site filled with toxic material.

1) Recycling of panels:

Staff noted that they don't see eye-to-eye with sPower on recycling of the solar panels. That's an understatement. The first version of the staff report for SUP 0001 dtd Nov 29th (pg 15 under Key Findings, Against) said that: "The decommissioning bond value cannot be accepted as proposed." The staff report also required "decommissioning plan revisions as recommended by the County's consultant (Dewberry) to address the full breadth of decommissioning a SEF." sPower has not changed the recommended bond value since then. Additionally page 3 of Dewberry's report (dtd 11/26/18) stated "Dewberry recommends that the County require bonding the actual cost of the decommissioning before the recycling amounts are figured in."

As the Chairman noted during the hearing, line 16 of the Conceptual Cost Estimate lists a cost of over $11 million to remove and recycle the photovoltaic modules. It also includes a credit of over $8 million as a result of recycling the panels. No reference or evidence was provided to support the $8 million estimate. Even sPower's consultant, Dr Fthenakis testified on Jan 2nd that First Solar charges to recycle their CdTe panels. In fact First Solar charges $6.50/panel to recycle a CdTe panel with a price increase expected this year. I've also contacted two of the PV panel recyclers that sPower lists in their decommissioning plan and was provided the following costs to recycle the Jinko (crystalline silicon) panels (correspondence from recyclers included as an attachment to this email):

Dynamic Lifecycle Innovations: 40 cents/lb (they don't recycle CdTe)
Cleanlites Recycling: 48 cents/lb (also no CdTe)
The Jinko CrSi panels weigh 58.4 lbs

Using sPower's panel mix of 70% CrSi and 30% CdTe:

540,000 CdTe panels (First Solar @ $6.50/panel):	$3,510,000
1,260,000 CrSi panels (Dynamic Lifecyle @ 40 cents/lb and 58.4lbs each):	$29,433,600
Total estimate to recycle all panels:	$32,943,600

Based on these estimates, the county would be facing over $30M to dispose of these panels (in today's dollars) - not an $8 million credit as sPower's estimate assumes. These estimates will force sPower to adjust their total decommissioning cost from $10.9 million to over $50 million. Dr Fthenakis mentioned that he expects the market for panel recycling to change as panels become obsolete and need to be replaced or facilities are decommissioned. If that prediction is correct, then sPower can work with the county to adjust the bond downward every two years as their attorney has suggested. **However, there is no market now.** If anything the county should over calculate the bond to provide an incentive for the developer to do the decommissioning work themselves rather than walk away and leave it to the county. This protects the county and is in accordance with the SEF ordinance.

Additionally, the Electric Power Research Institute (EPRI) conducted a study in 2018 to estimate decommissioning costs for a conceptual 11MW solar plant at the end of its useful life. Their key finding was negative net salvage value of $83/KW which equates to $41.5 million for sPower's proposed plant. The actual cost for sPower's plant will be higher since the study assumed panels will be
landfilled. Link: https://publicdownload.epri.com/PublicDownload.svc/product=000000003002013116/type=Product

Additional supporting information is attached:

- Emails from recyclers.
- Links to 4 articles on the current state of the solar recycling industry

2) Soil remediation

The second concern in the sPower decommissioning plan is remediation of soils. From Dewberry's report pages 2-3 (dtd 11/26/18):
"#7: The Decommissioning Plan does not address restoration of compacted soils, resulting from construction traffic and activities during decommissioning of the site..."
"#9: Additional information/detail shall be provided on the restoration of the ground after the existing underground conduits and lines are removed."
SPower is required by the SEF ordinance to return the site to the conditions reasonably similar to the conditions prior to development. They refuse to even reclaim the roads which would have been compacted during construction and used for years. If sPower or a subsequent landowner wants to keep some of the features (i.e. fencing etc) of the facility for other purposes, they would need to submit a special use permit or rezoning as required by county ordinances at that time. The bond must include the costs for full remediation to protect the county and should not be discounted based on unknown future uses of the land.

3) Comply with the SEF ordinance

Finally, delaying resolution of this issue until the site plan stage, as proposed in the latest staff report, will increase risk to the county and is not in accordance with the SEF ordinance (excerpt below). That ordinance is very specific on decommissioning requirements - in fact more than half of the SEF ordinance deals with decommissioning. <u>The county should require that the plan and cost estimate be corrected and made a part of the SUPs' conditions.</u>

There were a number of other provisions in Dewberry's report that sPower ignored in their revised decommissioning plan (dtd 12/13/18). Two examples:
Assumed reclamation of only 1230 of the 3,500 acres
Assumed a 25 year project life not the 35 year life that sPower is proposing

Should sPower refuse to modify their decommissioning plan as required by the ordinance and requested by the County and Dewberry, <u>this alone would provide justification to recommend disapproval of the SUPs.</u>

Thank you and please contact me with any questions.

Sean Fogarty
Livingston District

Excerpt from the county's SEF ordinance:
The SEF ordinance requires a decommissioning plan and cost estimate be provided by the applicant (SEF ordinance paragraph (d) (11)). Specifically: "The planning commission shall not recommend, nor shall the board of supervisors approve, the proposed special use unless it satisfies the following standards...(d)(11) As part of the SEF application, the applicant shall submit a decommissioning plan...and such plan shall include the following: b. The timeline and manner in which the SEF will be decommissioned and the site(s) restored to a condition reasonably similar to the conditions prior to development; c. The estimated decommissioning cost in current dollars of each phase described in the construction phasing plan; d. The estimated cost of post-decommissioning site restoration."

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