



STATE OF TENNESSEE  
DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
NASHVILLE, TENNESSEE 37243-0435

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COMMISSIONER

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October 17, 2019

**Via Electronic Mail to [jtcates@tva.gov](mailto:jtcates@tva.gov)**

Attn: Taylor Cates, NEPA Specialist  
Tennessee Valley Authority  
1101 Market Street, BR2C-C  
Chattanooga, TN 37402

Dear Ms. Cates:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority (TVA) *Draft Environmental Assessment (EA)* for construction and operation of a proposed solar facility, the Yum Yum Solar Energy Center, as well as actions taken by TVA to construct a new switching station and transmission line (TL) to connect the solar facility to the existing TVA transmission system in Fayette County, Tennessee. The proposed Yum Yum Solar Energy Center would be constructed and operated by Yum Yum Solar and would have alternating current (AC) generating capacity of 147 megawatts (MW) and would occupy portions of 25 individual tracts of land, which in their entirety encompass nearly 4,003 contiguous acres of which approximately 2,639 are proposed for solar development.<sup>1</sup> In addition to purchasing the electric output under the power purchase agreement (PPA) with Yum Yum Solar, TVA would construct the proposed Yum Yum 161-kV Switching Station, and a 190-foot 161-kV TL would connect the new switching station to TVA's adjacent existing Cordova-South Jackson 161-kV TL.

Actions considered in detail within the Draft EA include:

- **No Action Alternative** – The No Action Alternative provides a baseline of conditions against which the impacts of the Proposed Action Alternative are measured. Under the No Action Alternative, TVA would not purchase the power generated by the Project under the 20-year PPA with Yum Yum Solar (i.e., TVA would not be involved with the Project), and Yum Yum Solar would not construct or operate the Yum Yum Solar Energy Center. Existing conditions (land use, natural resources, visual resources, physical resources, and socioeconomics) in the Project Area would remain unchanged. TVA would continue to rely on other sources of generation described in the 2019 Integrated Resource Plan to ensure an adequate energy supply and to meet its goals for increased renewable energy and low GHG-emitting generation.

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<sup>1</sup> The Yum Yum Solar Energy Center would consist of a solar array containing crystalline silicon PV panels attached to ground mounted single-axis trackers, central inverters, several medium voltage transformers and one or two main power transformers (MPTs), internal site access roads, and all associated cabling and safety equipment. The MPTs would be located within a proposed Project substation and would connect to TVA's existing Cordova-South Jackson 161-kV TL via TVA's proposed Yum Yum 161-kV Switching Station and associated 190-foot TL connection.

- **Proposed Action Alternative** – Under the Proposed Action Alternative, Yum Yum Solar would construct and operate a 147-MW AC single-axis tracking photovoltaic (PV) solar power facility in Fayette County, Tennessee. The solar facility would generate approximately 191-MW DC output that would be converted to 147-MW AC output for transmission to the electrical network. The energy generated by the project would be sold to TVA in accordance with the terms of the PPA. The project would occupy approximately 2,639 acres of land located on 25 individual parcels immediately southwest of the Yum Yum community and would connect to the TVA electrical network via TVA’s adjacent existing Cordova-South Jackson 161-kV TL. Under the Proposed Action, TVA would construct a new, 161-kV switching station northwest of the intersection of Wilson Road and Fowler Drive. A proposed 190-foot 161-kV TL would connect the new switching station to the Cordova-South Jackson 161-kV TL (L5190).

TDEC has reviewed the Draft EA and provides the following comments:

### **General Comments**

The project is within the New Madrid Seismic Zone. According to the Catastrophic Earthquake Response Planning Project (2009), Fayette County is listed as a county that is anticipated to be impacted or severely impacted during a major seismic event.<sup>2</sup> This area is anticipated to experience increased soil amplification and liquefaction. TDEC recommends TVA consider soil amplification and liquefaction potential at the site to determine the risk from seismic activity. Additionally, TDEC recommends designing and constructing the Yum Yum Solar Energy Center such that it meets the most current earthquake readiness recommendations.<sup>3</sup>

### **Cultural and Natural Resources**

TDEC believes the Draft EA adequately addresses potential impacts to cultural and natural resources within the proposed project area.<sup>4</sup>

### **Energy Resources**

TDEC is supportive of resiliency efforts, including more decentralized power supply, in the state. In the event of an energy emergency, the site may provide an emergency source of electricity for critical infrastructure and facilities (e.g., hospitals, shelters, food banks) in the region. TDEC encourages TVA to consider constructing the Yum Yum Solar Energy Center as a microgrid to increase the State’s energy security in and near the New Madrid Seismic Zone.

TDEC recommends that consideration be given to using electric-powered lawn equipment, which can be as much as fifty percent (50%) quieter than traditional gas-operated model. Electric-powered Lawn equipment has zero air emissions onsite, reduces petroleum-fuel purchases, and eliminates used oil waste.<sup>5</sup> Similarly, if there is an opportunity to use all-electric portable earthmoving equipment, it would result in reduced noise, air emissions,

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<sup>2</sup> For more information, please visit [http://cusec.org/documents/scenarios/2009\\_Scenario\\_MAE\\_Center\\_Vol\\_I.pdf](http://cusec.org/documents/scenarios/2009_Scenario_MAE_Center_Vol_I.pdf).

<sup>3</sup> Institute of Electrical and Electronics Engineers (IEEE). Recommended Practices for Seismic Design and Substations 10 April 2019, for more information visit <https://ieeexplore.ieee.org/document/8686442>.

<sup>4</sup> This is a state-level review only and cannot be substituted for a federal agency Section 106 review/response. Additionally, a court order from Chancery Court must be obtained prior to the removal of any human graves. If human remains are encountered or accidentally uncovered by earthmoving activities, all activity within the immediate area must cease. The county coroner or medical examiner, a local law enforcement agency, and the state archaeologist’s office should be notified at once (Tennessee Code Annotated 11-6-107d).

<sup>5</sup> Lawn equipment could be charged on site with the energy generated.

petroleum-fuel purchases, and used oil waste. TDEC recommends TVA consider these additional details in the Final EA.

Finally, TDEC recommends that TVA consider addressing any potential Electro Magnetic Field (EMF) impacts that may result from the proposed action in the Final EA.<sup>6</sup>

## **Air Resources**

TDEC recommends that should open burning be considered for disposal of wood wastes generated from the proposed project, alternatives to open burning, including chipping, composting or grinding of wood waste, be evaluated first. If open burning is selected for wood waste disposal TVA should consider implementing a smoke management plan, not burning on air quality alert days, and coordinating burning with other agencies (local and State air pollution control agencies, forestry agencies and local fire departments). TDEC encourages the Final EA to include discussion relating to these considerations.

TDEC understands that a number of old buildings and abandoned structures exist in the project area but it is unclear as to whether any of the structures would be required to be demolished or removed from the site. If any demolition activity is anticipated, an Asbestos Demolition or Renovation Notification should be provided as needed in advance of any demolition work.<sup>7</sup> TDEC encourages TVA to include discussion in the Final EA relating to the need to complete appropriate notification(s) in advance of any demolition activities as required under the state of Tennessee asbestos regulations and that if Regulated Asbestos-Containing Material is identified as present or likely to be encountered during the proposed project, that appropriate measures be taken to abate the asbestos as needed.

Some existing and new solar power generating facilities may use emergency engines (diesel, gasoline or natural gas/propane powered) to operate emergency electric generators on site. The Draft EA does not include a reference to this type of equipment. If emergency generators are to be installed on site they may be subject to permitting under TDEC's "Permit by Rule" regulations or may be small enough to qualify as an "insignificant activity" and not be subject to permitting.<sup>8</sup> TDEC encourages TVA to include discussion relating to this in the Final EA.

## **Solid Waste**

TDEC recommends that any wastes associated with the proposed action or its alternatives be managed in accordance with the Solid and Hazardous Waste Rules and Regulations of the State of Tennessee.<sup>9</sup> TDEC recommends that the Final EA reference that any wastes that are generated during the construction process or uncovered during site preparation are subject to the Solid and Hazardous Waste Rules and Regulations of the State of Tennessee.

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<sup>6</sup> There is increased stakeholder awareness regarding possible EMF impact and utility scale solar projects. While consensus regarding effects in general, and more specifically, their magnitude, has yet to be reached, it may be in TVA's best interest to proactively address any concerns that Tennessee Valley customers may have.

<sup>7</sup> For more information on TDEC's Asbestos Demolition or Renovation Notification requirements, please visit <https://www.tn.gov/environment/program-areas/apc-air-pollution-control-home/apc/asbestos-information/notification-of-asbestos-demolition-or-renovation.html>.

<sup>8</sup> In either case, the facility owners or authorized representative would need to submit documentation to the Division of Air Pollution Control as needed for permitting or an exemption. For more information on TDEC Division of Air Pollution Control permitting, please visit <https://www.tn.gov/environment/program-areas/apc-air-pollution-control-home/apc/permit-air-home.html>.

<sup>9</sup> Reference TDEC SWM Rule 0400 Chapter 11 for Solid Waste and Chapter 12 for Hazardous Waste <http://sos.tn.gov/effective-rules>.

## Water Resources

TDEC concurs with TVA that a Stormwater Construction General Permit (CGP) and Stormwater Pollution Prevention Plan (SWPPP) as well as an Aquatic Resource Alteration Permit (ARAP) based on the six streams that will be crossed. A hydrologic determination has already been performed and submitted to TDEC in association with this project. Additionally, the submittal indicates that the solar panel washing will be with water only and any herbicide use will be limited in scope and there will be 25 foot buffers around the streams.

The Draft EA indicates there will be a septic tank and well installed for the operational and maintenance building, which will likely require TDEC permitting. Full time staff for the building is expected to be 6 persons. If the septic system has the capacity to serve more than 20 persons, it will need to be permitted as a large capacity septic system. If the well will serve 25 or more persons more than 60 days per year, it will be considered a public water system and be regulated either as a transient non-community system or a non-transient non-community system.<sup>10</sup> TDEC encourages TVA to include additional information relating to the septic system and well in the Final EA.

TDEC appreciates the opportunity to comment on this Draft EA. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,



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Tennessee Department of Environment and Conservation  
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cc: Kendra Abkowitz, PhD, TDEC, OPSP  
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<sup>10</sup> A non-transient non-community water system is a non-community water system that regularly serves at least 25 of the same persons 60 or more days per year. A transient non-community water system serves at least twenty-five (25) different individuals daily at least sixty (60) days out of the year. For more information on TDEC Division of Water Resources permitting, please visit <https://www.tn.gov/environment/permit-permits/water-permits.html>.