

Comments on the draft Tennessee Valley Authority Integrated Resource Plan from the TN Business Leaders for a Clean Energy Economy

The TN Business Leaders for a Clean Energy Economy appreciates the opportunity provided by the Tennessee Valley Authority (TVA) to submit comments with respect to TVA's Integrated Resource Plan (IRP).

TN Business Leaders for a Clean Energy Economy

TN Business Leaders for a Clean Energy Economy is a network of businesses and business leaders that spans a wide spectrum of industry and commerce within the TVA area. Its members participate across the complete value-chain of clean energy (from producers to manufacturers to consumers). The organization supports the transition to a low-carbon, clean energy economy in Tennessee as a means of driving economic growth and job creation within the state. The organization also acts as a coordinating entity for entrepreneurs, business owners, and business leaders to empower the Tennessee business community to influence public policy. These comments are submitted by Susan Richardson Williams and Cortney Piper as coordinators of TN Business Leaders for a Clean Energy Economy on behalf of the organization (and should not be attributed to any individual member(s) of the organization).

Summary of Comments

The organization has reviewed the IRP and the details related to TVA's scenario planning. We particularly support the preferred strategies that include increased emphasis on energy efficiency and transition from historical coal-fueled power generation. However, we would encourage TVA to reassess the contributions low-carbon, clean energy production (especially from solar and biomass sources) could make to its portfolio planning. We would also encourage TVA to reassess what we consider to be a relative lack of true diversity in power production capabilities under even the Diversity Focused Resource Portfolio (Strategy C) and the EEDR & Renewables Focused Portfolio (Strategy E). Last, we would encourage TVA to seek out further opportunities, through education, work with third parties, or direct economic involvement to maximize energy efficiency strategies (which we believe will not only help balance demand and production decisions in the TVA region, but also effectively create jobs and improve the economy in Tennessee).

Increase Diversity of Production from low-carbon, clean energy

In all TVA scenarios (including Diversity and Renewables Focused Portfolios), the vast proportion of capacity is forecasted to be generated from coal, nuclear, and natural gas facilities. From the graph on page 16 of the IRP it appears that less than 4% of additional capacity planning anticipates an increase in "renewables" generation. Given the high-profile, multi-billion dollar investments being made through federal, state, and private sources in the TVA region on alternative energy options (especially with respect to solar production), we would suggest that "business as usual" is not consistent with current public sentiment, current public policy, or current private-sector trends in Tennessee with respect to alternative energy production. We would encourage TVA to reassess the contribution low-carbon alternative energy production

could play within its portfolio planning, consistent with the expressed sentiments of government, industry, and consumers for an increase in utilization of production from these sources. We believe this reassessment is consistent with TVA's mission of "improving the quality of life in the Tennessee River Valley region through its work in energy, environment, and economic development." 2007 Strategic Plan of TVA, p 5.

Reduce Dependency on Alternative Energy Purchasers from Out-of-State Sources

In all of the current IRP scenarios, the vast majority of the future renewables capacity appears to be through large Power Purchase Agreements (PPAs), primarily with wind-turbine facilities located in seven mid-west states (IRP, p 70). At the current time it appears that TVA has an installed base of less than 100 MW of solar production, but PPAs for out-of-state wind production for over 1300 MW from wind production. This disparity appears to increase over time under every IRP scenario.

In our opinion, the funding of wind-generation facilities by TVA in mid-west states through the current and anticipated PPAs is not consistent with TVA's mission "to improve the quality of life in the Tennessee River Valley region [through] economic development." 2007 TVA Strategic Plan, p 5). Practically, the PPAs with out-of-state wind-generation facilities result in the net export of utility payments made by Tennessee residents to fund economic development initiatives in these other states. This situation creates a negative balance of trade in Tennessee with respect to renewable energy resources as significant as the current negative balance of trade related in oil imports that the US experiences with OPEC countries. We would urge TVA to reconsider this strategy of out-of-state energy purchases using Tennessee dollars and to use its best efforts to assure that Tennessee utility dollars fund Tennessee economic development with respect to renewable energy resources.

Increase Emphasis on Solar Production

In our opinion, TVA should more seriously consider including more in-state solar production capacity, especially with respect to meeting peak load requirements for day-time energy consumption during the summer months. While the IRP indicates a baseline evaluation of solar energy production at 17% (approximately four hours of usable solar radiation available each day) (IRP, p 72), this annual average ignores the synergies between peak solar power production capabilities and peak electricity demand within the TVA region. Specifically, solar production is uniquely positioned to provide incremental generation capacity that matches TVA peak demand load requirements (summer months/day time). Failure by TVA to recognize and incorporate this synergy could result in TVA planning for additional non-solar facilities for peak loads (only to have such non-solar facilities be underutilized, on the average, during non-peak demand periods).

Similarly, in our opinion TVA should also consider the advantages related to the distributed nature of solar production. Distributed solar power production facilities create the opportunity to balance loads locally, rather than across the entire electric grid structure. This could reduce dependencies related to transmission line capacity constraints across large portions of the grid – allowing local solar generation facilities to supply local needs within the local transmission

network. Meeting local needs with local production also provides multiple points of redundancies on the supply side that could reduce the likelihood of system-wide brown-outs, reduced availability, or rationing of available centralized capacity. This type of distributed local production and local utilization is becoming increasingly critical as major transmission lines reach maximum load thresholds (especially during the same peak demand periods that solar production specifically addresses).

In our opinion, TVA currently also currently undervalues the economic contribution of solar power generation from Tennessee facilities, especially under the current Generation Partners and Renewable Standard Offer programs. In each of these solar power generation programs, TVA pays a premium above the prevailing retail rate to the solar generation partner. This premium has been critical in driving solar installations in Tennessee. However, as part of both programs TVA also requires the solar power producer to assign the Solar Renewable Energy Credit (SREC) to TVA to hold or trade. Current market pricing for SRECs is at a minimum in the \$200-\$250/MW range. Practically, this means that the value of the SREC is roughly equivalent to the total price TVA pays to the solar power producer for the electricity produced (including the premium). The end result on a macroeconomic level is that the actual cost to TVA of the electricity provided by the solar producer is negligible (the value of the SREC transferred by the solar power producer to TVA being equivalent to the price paid by TVA for the electricity produced). Given these macroeconomics, an economically rationale approach for TVA would be to maximize solar production in Tennessee as a low/no cost generation source through continued or expanded premiums (based upon the true value of the SREC TVA recognizes under its current solar production programs). TVA should also consider increasing premiums paid for solar power production as the market value of the SRECs increases over time (in order to encourage new sources of such low/no cost electricity supply).

Expedite Study and Use of Biomass and Biomass Co-firing

From the IRP it appears that TVA is currently conducting fuel availability surveys and a study to assess the feasibility of converting one or more coal-burning units to biomass units. IRP, p 72. However, there is nothing included within the IRP with respect to how or when these surveys or studies may be incorporated into any portfolio decision TVA may make.

We would encourage TVA to complete these biomass surveys/studies as quickly as possible and anticipate/articulate a process by which biomass could play a larger role in power production facilities. We feel that such generation from biomass is consistent with TVA's mission of improving energy, the environment, and the economic development for residents of Tennessee. 2007 Strategic Plan of TVA, p. 5. Particular attention should be paid to the incremental benefits that may be achieved by biomass co-firing and use of crop, forest, milling, and urban wood residue biomass as renewable sources (all of which reinforce TVA's mission with respect to improving the environment). Current studies indicate that Tennessee has the potential to generate more than a quarter of its energy from renewable sources and we believe that TVA should more fully explore the economics of using locally available biomass residue within the timeframe of the IRP. Consistent with TVA's economic development mandate, current studies show that commercial implementations of biomass could also contribute an estimated 4000 jobs

in rural Tennessee counties (contributing to TVA's mission to support economic development within the region).

Using Education and Incentives to Encourage Efficiency

We believe that the most direct and consistent approach to increasing energy efficiency is through positive incentives and education.

We applaud the approach that TVA has taken in the IRP with respect to both commercial and residential programs to provide audit information that can be directly used for energy conservation measures (such as the In-Home Energy Evaluation Program). We think that such programs are effective with respect to the TVA economic development mission. Specifically, we would recommend that TVA extend programs such as the In-Home Energy Evaluation Program beyond October, 2010.

We would also recommend that TVA work with third-party lenders to assure an easily accessible source of ten-year, fixed-rate financing across the full-spectrum of energy efficiency upgrades (expanding such programs beyond the current Heat Pump Program). Repayment options currently available from TVA through the consumer's electric bill could also be extended to allow for direct disbursements to third party lenders by TVA based upon consumer savings from the consumer's electric bill (as security/collateral for repayment of such third-party loans). Such extensions could provide a direct, no-cost opportunity for TVA to effectively encourage the participation of third party lenders (including local banks and secondary lenders) to fund energy efficiency improvements that would otherwise require TVA capital. Such collateralization and repayment programs could also increase the capital investment by private lenders in the energy efficiency strategy critical under the TVA IRP.

We also applaud TVA's approach in the IRP with respect to energy upgrades that provide long-term savings. While TVA's comments on page 80 of the IRP with respect to increasing efficiencies through fluorescent light conversion are consistent with implementing change-oriented thinking among TVA's customer base (especially residential customers), we would encourage TVA to constantly monitor the marketplace for potential breakthrough technologies such as magnetic induction lamps (which can provide three times as much useful light as fluorescents while consuming one-third the power) for commercial uses and the new generation of wafer LED lighting (which can provide the same effective illumination as incandescent and fluorescent lighting at small increments of the energy requirements of these more traditional forms of lighting) for both commercial and residential installations.

We would also request that TVA continually look for energy efficiency measures as a way to reduce the capital requirements and operational expenses associated with additional generation facilities. Our opinion is that energy efficiency initiatives can drive the Tennessee economy and can put money back into the pockets of Tennessee consumers. In this regard, energy efficiency investments generally cost less than half as much as comparable fossil fuel generation capacity.

We also would like to see TVA take the lead in making Tennessee one of the most productive states in the country. The U.S. as a whole uses roughly twice as much energy to produce a dollar

of goods as our European and Japanese trading partners. That puts the US at a serious competitive disadvantage in a global economy. Tennessee could dramatically increase its productivity and competitive position through significant energy efficiency measures. Increasing such productivity through energy efficiency could also reduce total electricity demand by as much as 34% (reducing the capital and operational expenses of TVA over the term of the IRP).

More Regular Updates to the IRP

We strongly encourage TVA to establish a policy of updating its resource plan a minimum of once every three years.

Prevailing practice among major utilities across the United States is to update their resource plans every 1-3 years. This frequency of update provides greater transparency and consistency in responding to changing economic and policy circumstances. Furthermore, this frequency of review and amendment of the TVA's IRP will assure that TVA maintains a policy and a strategy resource that incorporates the technological advances and changing regulatory conditions that are prevalent in the electricity generation and distribution industries.

For Further Information

As a coordinating entity for the Tennessee business community, TN Business Leaders for a Clean Energy Economy has significant additional information that may assist TVA in its decision-making with respect to the IRP. We would encourage TVA to utilize the organization to obtain information across the low-carbon, clean energy industry and as a conduit to reach out to specific business leaders within that community for further comment and information on how alternative energy supply and energy efficiency can contribute to TVA's planning process.

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