Comments in response to Tennessee Valley Authority's release of its Draft Integrated Resource Plan for public review and comment

Submitted by the Natural Resources Defense Council

November 15, 2010

The Natural Resources Defense Council (NRDC) respectfully submits these comments in response to Tennessee Valley Authority's (TVA) request for review and comment on its Draft Integrated Resource Plan (IRP) issued September 16, 2010. While NRDC has an interest in several areas covered by the draft IRP, we focus our initial comments on affirming and strengthening TVA's direction on energy efficiency, which we believe is fundamental to TVA meeting its August 2010 renewed vision to help lead the Tennessee Valley region and the nation toward a cleaner and more secure energy future. NRDC applauds TVA for its process and for its commitment to begin the next IRP process by 2015, presumably making this an iterative process that will allow timely incorporation of technological advances and policy developments.

NRDC is a non-profit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that a healthy economy needs. In this proceeding, NRDC represents the interests of its nearly 150,000 members and online activists in Tennessee, Alabama, Mississippi, Kentucky, Georgia, North Carolina, South Carolina, West Virginia, Indiana and Virginia in receiving affordable energy services and reducing the public health and environmental impact of the TVA region's energy consumption.

NRDC makes the following points and recommendations in these comments:

- Investments in cost-effective energy efficiency can provide invaluable economic, reliability and environmental benefits to TVA, its customers and its region;
- TVA has made a good start toward recognizing these benefits through its August 2010 commitment to help its customers reduce their energy use and become an energy efficiency leader in the Southeast;
- TVA can and must do even better than current projections to fully capture the economic, reliability and environmental benefits of energy efficiency for itself, its customers and its region, and to meet its renewed commitment to "lead the nation in improving air quality" and in leading "the Southeast in increased energy efficiency";
- In order to accomplish this, NRDC recommends TVA:
  1) begin implementation of its August 20th energy efficiency commitment as soon as feasible;
  2) conduct a new energy efficiency potential study that treats energy efficiency as a real resource on par with supply-side resources; and
  3) pursue an aggressive energy efficiency program ramp up aimed at acquisition of all cost-effective energy efficiency.
- The financial risk of future greenhouse gas regulation to TVA and its customers is real and greater than zero and should be reflected in the IRP analysis.

I. Investments in cost-effective energy efficiency can provide invaluable economic, reliability and environmental benefits to TVA, its customers and its region

Improving energy efficiency – getting the same or better comfort and performance from the nation's buildings, appliances and equipment while using less energy – provides enormous benefits. Utility customers want affordable, reliable, and environmentally sensitive energy services, and energy efficiency is a key resource to meet those objectives. Investments in efficiency can significantly lower energy bills and improve service reliability, create jobs, and cut pollution.

A recent study by the global consulting firm McKinsey & Company found that investments in efficiency could realistically cut U.S. energy consumption by 23% by 2020, saving consumers nearly $700 billion (net of the energy efficiency costs), and creating as many as 900,000 direct jobs (plus many more jobs as consumers reinvest their savings into the economy).[1] Other analyses have found an even larger potential for savings from efficiency nationwide.[2] In a typical household, efficiency improvements can save over $700 per year, or one-third of its more than $2,200 annual utility bill.[3]

Energy efficiency is the cheapest resource utilities can use to meet their customers' needs and improve energy reliability and security. Efficiency programs around the nation generally cost less than 4 cents per kWh,[4] or less than half the cost of avoided supply-side resources.[5] Efficiency makes a great investment: every $1 invested in efficiency programs typically provides customers at least $2 in benefits.[6] And the full savings are even greater since energy efficiency also avoids the health and environmental costs of dirtier alternatives which are not often quantified. Energy efficiency is a reliable and abundant procurement resource for TVA and can

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[1] McKinsey & Company, *Unlocking Energy Efficiency in the U.S. Economy*, July 2009, www.mckinsey.com/clientservice/electricpowernaturalgas/US_energy_efficiency/.

[2] See the discussion in Goldstein, D., *Invisible Energy: Strategies to Rescue the Economy and Save the Planet*. Point Richmond, California: Bay Tree Publishing, 2010, Chapter 3.

[3] U.S. Environmental Protection Agency, ENERGY STAR, "Where Does My Money Go?" www.energystar.gov/index.cfm?c=products.pr_where_money, accessed April 2010.

[4] *National Action Plan for Energy Efficiency*, July 2006, p. 1-6, www.epa.gov/cleanenergy/documents/suca/napee_report.pdf; Friedrich, K. et al, *Saving Energy Cost-Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs*, American Council for an Energy-Efficient Economy, Report U092, September 2009, www.aceee.org/research-report/u092.htm.

[5] U.S. Department of Energy, Energy Information Administration, *Annual Energy Outlook 2010*, DOE/EIA-0383(2010), April 2010, Figure 63, www.eia.doe.gov/oiaf/aeo/index.html. Levelized electricity costs for new power plants in 2020 include capital costs, fixed costs, variable costs including fuel, and incremental transmission costs.

[6] Friedrich, K. et al, *Saving Energy Cost-Effectively: A National Review of the Cost of Energy Saved Through Utility-Sector Energy Efficiency Programs*, American Council for an Energy-Efficient Economy, Report U092, September 2009, www.aceee.org/research-report/u092.htm.

reduce price volatility, hedge against financial risks, increase customer satisfaction, improve economic productivity, keep energy dollars local, and create jobs.

Energy efficiency is the cheapest and fastest way to cut pollution. The electricity and natural gas industries account for *more than half* of the nation's carbon dioxide (CO_2) emissions, the primary pollutant causing global warming.[7] Electricity generation is also responsible for a large portion of the nation's air and toxic pollution, including about 70% of sulfur dioxide emissions and 20% of nitrogen oxide emissions, which cause smog as well as respiratory and heart problems (such as aggravating asthma and increasing the chance of heart attacks and strokes). Electricity generation also contributes 68% of mercury air emissions, which is a potent neurotoxin that causes developmental problems.[8] The extraction of fossil fuels used to generate power and provide natural gas service causes additional global warming and air pollution, contaminates drinking water, and harms wildlife and their habitats.

Naturally, one wonders, "If energy efficiency could really save the nation $700 billion by 2020, why aren't households and businesses already taking advantage of these enormous savings?" As U.S. Secretary of Energy and Nobel Laureate Chu put it, "Energy efficiency isn't just low-hanging fruit; it's fruit lying on the ground."[9] But why haven't we picked it up? There is abundant evidence of market barriers that impede consumers' ability to make energy-efficient choices, and regulatory barriers that discourage utilities from investing in efficiency even though it is generally cheaper and less risky than power plant investments.[10]

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[7] Electricity generation is responsible for about 42% of U.S. carbon dioxide emissions, and natural gas used in homes, businesses and industries is responsible for 14%. In 2007, natural gas used in residential, commercial, and industrial sectors emitted 256.9, 163.4, and 385.6 million metric tons of CO_2 (MMTCO2), respectively. U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*, April 15, 2009, Table 3-5, www.epa.gov/climatechange/emissions/downloads09/Energy.pdf. In 2007, electricity generation emitted 2,397.2 MMTCO2. Total U.S. CO_2 emissions in 2007 were 5,735.8 MMTCO2. U.S. Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007*, April 15, 2009, Table ES-3, www.epa.gov/climatechange/emissions/downloads09/ExecutiveSummary.pdf.

[8] Ceres, NRDC, PSEG, and PG&E Corporation, *Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States*, May 2008, www.nrdc.org/air/pollution/benchmarking/default.asp; NRDC Fact Sheet "Dirty Coal Is Hazardous to Your Health: Moving Beyond Coal-Based Energy," October 2007, www.nrdc.org/health/effects/coal/coalhealth.pdf; Clear the Air, *Dirty Air, Dirty Power*, June 2004, www.catf.us/resources/publications/view/24.

[9] U.S. Department of Energy, "DOE to Fund up to $454 Million for Retrofit Ramp-Ups in Energy Efficiency," September 14, 2009, http://apps1.eere.energy.gov/news/daily.cfm/hp_news_id=202.

[10] See, e.g., Golove, W.H. and J.H. Eto, *Market Barriers to Energy Efficiency: A Critical Reappraisal of the Rationale for Public Policies to Promote Energy Efficiency*, Lawrence Berkeley National Laboratory, LBL-38059, March 1996, http://eetd.lbl.gov/EA/emp/reports/38059.pdf. Western Governor's Association Clean and Diversified Energy Advisory Committee's Energy Efficiency Task Force, *The Potential for More Efficient Electricity Use in the Western United States*, December 19, 2005, www.naesco.org/resources/industry/documents/2005-11-18.pdf. Kushler M. and P. Witte, *Can We Just "Rely on the Market" to Provide Energy Efficiency? An Examination of the Role of Private Market Actors in an Era of Electric Utility Restructuring*, American Council for an Energy-Efficient Economy, Report U011, September 2001, www.aceee.org/research-report/u011.htm. Cavanagh, R., "Energy Efficiency in Buildings and Equipment: Remedies for Pervasive Market Failures," for the National Commission on Energy Policy, December 1, 2004,

Energy consumers face many barriers to improving efficiency, including inadequate information or time to evaluate efficiency opportunities (as everyone knows who has rushed to replace a broken water heater, furnace or refrigerator), and lack of efficient product options in local stores. Residential, business and industrial customers may lack access to capital or face competing demands for the capital necessary to make structural improvements or replace major pieces of equipment. Furthermore, decisions about efficiency levels are often made by people who will not be paying the utility bills (such as the situation of landlords and renters). These are just a few of the numerous and pervasive market barriers that customers face in adopting cost-effective energy efficiency. Experts and experience teach us that these barriers must be addressed by strong policies and effective, sustained programs to help customers capture the full benefits of energy efficiency.

TVA can and must be a crucial player in the effort to overcome these barriers and help its consumers increase energy efficiency. Since helping customers use energy more efficiently is often the cheapest way to meet utilities' goals to provide electricity reliably, affordably, and in an environmentally responsible manner, TVA should be investing in efficiency opportunities whenever it is cheaper than investing in new power plants, wires or pipelines. TVA is in the perfect position to lead the region to a more sustainable energy future.

II. TVA has made a good start toward realizing these benefits through its August 20th commitment to help its customers reduce their energy use and become an energy efficiency leader in the Southeast

In economic and ecological times such as we currently live, no region can afford to ignore a plentiful, low cost, clean resource like energy efficiency. NRDC applauds TVA's commitment to become an energy efficiency leader in the Southeast. This goal is right in line with other commitments made by utilities across the various states of the region. Meeting this goal will require a significant ramping up of energy efficiency programs and infrastructure.

The Southeast region of the United States is waking up to the fact that it has significant, untapped energy efficiency resources that can be cost effectively deployed to satisfy load. Recent studies, such as *Energy Efficiency in the South* conducted by Georgia Tech and Duke University, confirm that load growth from the residential, commercial and industrial sectors could be met by just using cost effective energy efficiency for the next twenty years (through 2030).[11] Recent utility rate case decisions across the region are also beginning to recognize the

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www.energycommission.org/files/finalReport/III.1.a%20-%20Remedies%20for%20Failures.pdf. Brown, M.A. and S.J. Chandler, *Governing Confusion: How Statutes, Fiscal Policy, and Regulations Impede Clean Energy Technologies*, Georgia Institute of Technology, Working Paper #28, http://smartech.gatech.edu/bitstream/1853/23053/1/wp28.pdf. Goldstein, D.B., *Saving Energy, Growing Jobs: How Environmental Protection Promotes Economic Growth, Competition, Profitability and Innovation*, Bay Tree Publishing, April 25, 2007.

[11] Brown, M.A.; Gumerman, E.; Sun, X.; et al. *ENERGY EFFICIENCY IN THE SOUTH*. April 12, 2010: "Aggressive energy-efficiency initiatives in the South could prevent energy consumption in the RCI sectors from growing over the next twenty years. The initiatives would involve actions at multiple levels

benefits of energy efficiency and requiring utilities to implement energy efficiency programs to help customers across all three sectors manage their energy use.[12]

However, there is no reason why any cost effective energy efficiency should go to waste. We would like TVA to commit to use the cheapest resource when it comes to meeting the load it serves, whether it is energy efficiency or other traditional supply side options. Many utilities in the region have already begun to take that step and TVA can do so as well to become a leader in energy efficiency delivery.

III. TVA can and must do even better to fully capture the economic, reliability and environmental benefits of energy efficiency for itself, its customers and its region

TVA's IRP does not incorporate all cost-effective energy efficiency into any of its scenarios or model runs, which artificially limits the amount of energy efficiency included. TVA should model energy efficiency as a resource on par with any other resource it may deploy to meet demand. This would allow energy efficiency to compete on equal footing with any other resource in the modeling exercise. Constraining the deployment of energy efficiency in the modeling in any way other than cost-effectiveness does not allow for all the cost effective efficiency to be utilized. Modeling results are therefore skewed in favor of supply-side options adding resources that are not least cost and subjecting the region to additional unnecessary risk.

The IRP also fails to include any meaningful incremental additions of energy efficiency beyond 2020. The savings estimates are almost entirely from existing efficiency technologies and contains little that is not already commercialized and cost-effective. TVA essentially estimated 2020 potential and not 2030 potential, and did not take into account technology change or innovation that would create new efficiency opportunities in the 2020-2030 period. This results in more costly resource investments for customers than are necessary to meet their needs.

A recent meta-review of more than 20 state, regional and national electricity efficiency potential studies by ACEEE identified an annual average achievable electricity savings potential of

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(state and local, national, utility, business, and personal). In the absence of such initiatives, energy consumption in these three sectors is forecast to grow by approximately 16% between 2010 and 2030."

[12] In a Joint Stipulation before the North Carolina Utilities Commission signed in June 2009, Duke Energy Carolinas, LLC committed to: "[T]he Company intends to pursue all cost-effective energy efficiency and to commit to an overall energy efficiency target to achieve on-going annual electricity savings resulting from the Company's energy efficiency programs of at least 1% of 2009 weather-normalized retail electricity kWh sales by 2015 (*i.e.*, 1% kWh savings in 2015 and an additional 1% in 2016, to total 2% of weather-normalized retail electricity kWh sales in 2016, and so on), with savings each year over the 2009-2014 period ramping up to this incremental 1% per year target. The ability to ramp up to this goal will give the Company time to develop and expand its energy efficiency program offerings." DOCKET NO. E-7, Sub 831.
The same stipulation was reached by Duke Energy and others in a parallel South Carolina rate case.

1.5%.[13] Several other relevant studies have been done and should be considered. For example, according to the McKinsey Global Institute study (2006) of energy-efficiency potential, if all energy efficiency measures with internal rates of return of 10% or better are implemented, US residential energy demand could be reduced by 36% below its 2020 baseline and commercial energy use could be reduced by 19%.[14] In addition, the American Physical Society found that energy demand from the entire U.S. buildings sector (everything from houses to light bulbs to office towers to retail stores) would not grow *at all* from 2008 – 2030 if we deployed energy efficiency measures costing less than the energy they displaced.[15]

Another recent study performed by the Georgia Institute of Technology and Duke University focusing in the Southeast of the US, found that "aggressive energy efficiency initiatives in the South could prevent energy consumption in the [residential, commercial and industrial] sectors from growing over the next twenty years." In other words, energy efficiency programs could offset all of the forecasted growth (16%) in energy demand in the South between 2010 and 2030.[16] This of course assumes measures and efforts in addition to utility programs, but the potential is high nonetheless.

Two important indicators to determine whether an efficiency program portfolio is adequately aggressive are: (i) the energy savings relative to the available cost-effective potential, and (ii) the energy savings and targets relative to achievements and targets in other jurisdictions. Aggressive efficiency programs around the country today typically achieve net annual first-year savings of at least 1-2% of annual electricity sales and 1-1.5% of annual natural gas sales.[17] Many leaders around the country are now aiming even higher, achieving higher levels of savings and setting even more aggressive targets.[18] And since energy efficiency savings are measured relative to

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[13] Eldridge, M, R. N. Elliot, and Max Neubauer. 2008. *State-Level Energy Efficiency Analysis: Goals, Methods, and Lessons Learned.* American Council for an Energy-Efficient Economy.
[14] McKinsey Global Institute, *Productivity of Growing Global Energy Demand: A Microeconomic Perspective,* November 2006.
[15] American Physical Society. *ENERGY FUTURE: THINK EFFICIENCY*. September 2008.
[16] Brown, M.A.; Gumerman, E.; Sun, X.; et al. *ENERGY EFFICIENCY IN THE SOUTH*. April 12, 2010
[17] See, for example, Eldridge, M. et al, *The 2009 State Energy Efficiency Scorecard,* ACEEE Report E097, October 2009; Nadel, S., *Energy Efficiency Resource Standards: Experience and Recommendations,* ACEEE Report E063, March 2006; Kushler, M. et al, *Meeting Aggressive New State Goals for Utility-Sector Energy Efficiency: Examining Key Factors Associated with High Savings,* ACEEE Report U091, March 2009; and Eldridge, M. et al, *The State Energy Efficiency Scorecard for 2006,* ACEEE Report E075, June 2007. Illinois law, for example, sets targets increasing to 1% of natural gas sales per year beginning in 2016 and increasing to 1.5% of sales by 2020 (220 ILCS 5/8-104(c)).
[18] States are increasingly adopting goals and achieving electric savings of 2% to 3% of sales per year or higher and investing more than 4% of electric revenues. For example, Efficiency Vermont reports that it achieved electric savings of 2.5% of sales in 2008 (personal communication with George Twigg, Efficiency Vermont, August 27, 2010), Massachusetts has a goal of 2.4% of electric sales by 2012 ("Patrick-Murray Administration Announces Final Approval of Nation-Leading Energy Efficiency Plans," Press Release, January 29, 2010, www.mass.gov/?pageID=eoeeapressrelease&L=1&L0=Home&sid=Eoeea&b=pressrelease&f=100129_pr_nation_leading_ee&csid=Eoeea), Illinois law sets a target of 2% of electric sales per year beginning in 2015 (220 ILCS 5/8-103(b)), Arizona utilities have a goal to reach 22% of annual electric sales from energy efficiency in 2020 ("Commission Gives Final Approval to Energy Efficiency Rules," Arizona

minimum requirements established by building codes and appliance efficiency standards or standard market practice, savings from efficiency programs should be expected to be even higher in states that have not implemented stringent building codes or appliance efficiency standards. TVA should meet their targets in a way that will maximize net benefits to customers, including by helping to upgrade or improve implementation of building codes and appliance efficiency standards.

TVA should take full advantage of all cost-effective energy efficiency by setting annual energy (GWh and MMTherm) and demand (MW) saving targets based on rigorous analyses of the achievable cost-effective potential in TVA's service territory,[19] and committing to aggressively ramp up their programs well beyond their August 20 commitments. Sustained efficiency programs steadily accumulate savings every year, growing to be a significant resource in short order. The steady growth in energy savings can make efficiency particularly valuable compared to "lumpy" investments in new power plants that often have a portion of their capacity sit idle for years until the full resource is needed.

IV. In order to accomplish this, NRDC recommends TVA:

1) begin implementation of its August 20th energy efficiency commitment as soon as feasible;

2) conduct a new energy efficiency potential study that treats energy efficiency as a real resource on par with supply-side resources; and

3) pursue acquisition of all cost-effective energy efficiency.

1) Begin implementation of its August 20th energy efficiency commitment as soon as feasible

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Corporation Commission, July 27, 2010, www.azcc.gov/Divisions/Administration/news/100727Energy%20Efficiency.pdf.), and Idaho Power Company and Rocky Mountain Power invest more than 4% of revenues in energy efficiency (Idaho Power Company, "Energy Efficiency Rider," I.P.U.C. No. 29, Tariff No. 101, Third Revised Sheet No. 91-1, June 1, 2009, www.puc.idaho.gov/internet/cases/elec/IPC/IPCE0905/FINAL%20APPROVED%20SCHEDULE%2091.PDF; Rocky Mountain Power, Electric Service Schedule No. 193, P.S.C.U. No. 47, Sixth Revision of Sheet No. 193.2, "Demand Side Management (DSM) Cost Adjustment," June 8, 2010, www.rockymountainpower.net/content/dam/rocky_mountain_power/doc/About_Us/Rates_and_Regulation/Utah/Approved_Tariffs/Rate_Schedules/Demand_Side_Management_%28DSM%29_Cost_Adjustment.pdf). For further discussion of aggressive state energy efficiency targets, see Furrey, L.A., S. Nadel, and J.A. Laitner, *Laying the Foundation for Implementing a Federal Energy Efficiency Standard*, ACEEE Report E091, March 2009, www.aceee.org/research-report/e091.

[19] For more information on measuring the cost-effective potential for energy efficiency, see National Action Plan for Energy Efficiency, *Guide for Conducting Energy Efficiency Potential Studies*, prepared by P. Mosenthal and J. Loiter, Optimal Energy, Inc., December 2007, www.epa.gov/cleanenergy/energy-programs/suca/resources.html.

The best way to accomplish its laudable goals on energy efficiency is for TVA to begin development and implementation of these programs immediately. Even for jurisdictions with a long history of offering energy efficiency programs, new programs have an unavoidable ramp up period associated with the development, tailoring and marketing of these programs among customer classes. The sooner TVA begins work on these programs, the sooner it will achieve the savings they can offer.

2) Conduct a new energy efficiency potential study that treats energy efficiency as a real resource on par with supply-side resources

As the cheapest, cleanest resource available to meet customers' energy service needs, TVA should establish cost-effective energy efficiency as its first priority resource in assembling the most reliable, least risky and lowest-cost portfolio in its integrated resource plan. Energy efficiency should be a more significant resource in its integrated portfolio, providing a resource equivalent to at least 10 to 20% of annual electricity sales within a decade and continuing to grow over time.[20] Efficiency lowers the cost of providing service (capacity and energy savings, lower fuel costs, defers new investment, reduces line losses and reserve requirements), diversifies the portfolio, improves reliability and reduces risk. As such, efficiency should not be considered just a social program operating on the sidelines (although it does make customers happy), and instead should be fully integrated into the utilities' planning and procurement.[21]

3) Pursue acquisition of all cost-effective energy efficiency

Cost-effective energy efficiency is, by definition, cheaper than alternative investments. A cost-effective portfolio of energy efficiency programs provides benefits that outweigh its costs, as measured by the Total Resource Cost (TRC) test. The TRC takes a societal perspective, and includes the total incremental costs of the energy-efficient measures that are installed, no matter who pays for them, as well as the cost of implementing the efficiency programs, and compares that to the benefits they provide to the participant and all the utility's customers from avoiding supply-side resource costs (including generation, transmission, distribution, non-energy, and environmental costs). A cost-effective portfolio of energy efficiency programs, as determined by the TRC test, helps meet the overarching objective of providing customers with reliable energy services at the lowest total cost.

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[20] Nadel, S., A. Shipley and R.N. Elliott, *The Technical, Economic and Achievable Potential for Energy-Efficiency in the U.S. – A Meta-Analysis of Recent Studies,* American Council for an Energy-Efficient Economy, in the proceedings of the 2004 ACEEE Summer Study on Energy Efficiency in Buildings, August 2004, www.aceee.org/conf/04ss/rnemeta.pdf. National Action Plan for Energy Efficiency, "Energy Efficiency: Reduce Energy Bills, Protect the Environment," www.epa.gov/cleanenergy/documents/suca/consumer_fact_sheet.pdf.

[21] For more information on integrating efficiency into utility resource planning and procurement, see National Action Plan for Energy Efficiency, *Guide to Resource Planning with Energy Efficiency*, prepared by S. Price et al., Energy and Environmental Economics, Inc., 2007, www.epa.gov/cleanenergy/energy-programs/suca/resources.html.

NRDC recommends that TVA only requires the *portfolio* of energy efficiency programs to be cost-effective, not each individual program or measure, to enable comprehensive and innovative approaches to improving efficiency to be included in the portfolio.

V. The financial risk of future greenhouse gas regulations to TVA and its customers is real and greater than zero and should be reflected in the IRP analysis.

TVA should carefully evaluate the impact greenhouse gas regulations will have on its portfolio of resources going forward. While Congress may have recently deferred regulating greenhouse gases under a new federal scheme, the Environmental Protection Agency (EPA) does not have such luxury. Under *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497 (2007), the Supreme Court of the United States determined that EPA does have the regulatory authority to control greenhouse gas emissions. On remand, EPA found that six greenhouse gases including CO_2 "in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare" and has set about controlling those emissions under the authority is granted to it by the Clean Air Act. It is expected that by during 2011, EPA will implement regulations controlling greenhouse gas emissions from point sources, including power plants.

Additionally, states have continued forward progress on regulations to address greenhouse gas emissions within their jurisdictions. In the Northeast, ten states begun a collaborative program controlling CO_2 from the power generating sector called the Regional Greenhouse Gas Initiative (RGGI). [22] RGGI became fully operational in 2009 and requires fossil fired power plants 25MW or higher to have an allowance for every ton of CO_2 they put into the atmosphere. Similar initiatives are underway for regional collaboration to reduce greenhouse gases in the Midwest[23] and the West coast[24]. Many jurisdictions are also designing or implementing climate action

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[22] www.rggi.org (last visited 11/15/2010): "The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Together these ten states have capped and will reduce power sector CO_2 emissions 10 percent by 2018. RGGI is composed of individual CO_2 Budget Trading Programs in each of the ten participating states. Through independent regulations, based on the RGGI Model Rule, each state's CO_2 Budget Trading Program limits emissions of CO_2 from electric power plants, issues CO_2 allowances and establishes participation in regional CO_2 allowance auctions."

[23] www.midwesternaccord.org (last visited 11/15/2010): "Nine Midwestern governors and two Canadian premiers have signed on to participate or observe in the *Midwestern Greenhouse Gas Reduction Accord* (Accord), as first agreed to in November 2007 in Milwaukee, Wisconsin. Realizing the unique and major impact that the Midwestern states play in the emissions of carbon, these governors wanted to institute Midwestern practicality in the debate on global warming."

[24] www.westernclimateinitiative.org (last visited 11/15/2010): "The [Western Climate Initiative] WCI began in February 2007 when the Governors of Arizona, California, New

plans to address their greenhouse gas emissions and reducing the emissions from power generation features prominently among the strategies outlined in the plans. Be it by paying a cost per unit of pollution or by having to install pollution abatement technology, the era of emitting pollution into the atmosphere free of charge is coming to an end very quickly. TVA must incorporate that financial risk into its analysis in order to properly inform its decisions going forward.

The Natural Resources Defense Council submits these comments in response to TVA's Draft Integrated Resource plan. We look forward to working with TVA.

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Mexico, Oregon, and Washington signed an agreement directing their respective states to develop a regional target for reducing greenhouse gas emissions, participate in a multi-state registry to track and manage greenhouse gas emissions in the region, and develop a market-based program to reach the target.