

TVA Notes

No. 20

The Learning Community

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Finances

Debt

Current debt (2/07): \$25.2 billion

\$22.9 billion - bonds and notes outstanding.

\$2.3 billion - other financing arrangements: Does not count towards debt limit and include lease/leaseback commitments, energy prepayment obligations

Current debt ceiling: \$30 billion set in 1979 by Congress.

Current assets: \$34.5 billion

Debt to assets ratio has improved over past decade: 80% in 1997 and 73% in 2007

Debt payment

By law, TVA is unable to sell equity and must sell bonds to finance capital programs.

Debt service is passed on to rate payers but has decreased over past decade:

34 cents / dollar in 1997 to 14 cents per dollar in 2006 (low interest rates)

Plans to reduce debt

1997 - TVA Board planned to cut debt from then \$27 billion to \$14 billion by 2007

2006 - TVA Board planned to cut debt by \$8 billion by 2016.

2007 - TVA Board plans to increase debt to \$30 billion debt ceiling due to new n-program. Will work on reducing existing debt by \$500 million annually.

Rates

FY 2006 - 17% increase in rates to cover fuel expenses

FY 2007 - TVA instituted Fuel Cost Adjustment: fuel and purchased power costs passed onto ratepayer as of 10/06. Quarterly adjusted. In 4/07, rates up .84 cent per kWh.

FY 2007 Budget - \$9.3 billion. 12,009 full-time employees.

Oversight

Only Congress has purview of TVA.

Balance sheets reviewed by Office of Management and Budget and General Accounting office.

2005 Consolidated Appropriation Act required TVA to file its first 10-K with SEC. No entity other than Congress has the responsibility to review its report or ask questions.

Freedom of Information Act

No utility board to arbitrate rate settings.

Customers

158 Distributors: 108 municipal utilities and 50 electric cooperatives.

Joint Ownership of Generating Assets: Distributors will help in financing certain power plant, such as a gas fuel generating plant, in exchange for ownership state. Projects include sharing in the cost of converting a gas-fired combustion turbine plant in Gleason, TN into a more efficient combined cycle plant.

62 directly served businesses and industries and federal agencies.

Largest Customer: TVA's uranium is enriched at the U.S. Enrichment Corporation's facility in Paducah, KY. It is TVA largest directly served customer. In 2006, provided TVA with 3.9% of its operating revenue in power sales - 10.5 Mwe.

TVPPA: TN Valley Public Power Assn. represents TVA's customers. Jack Simmons is the President and CEO.

Not Considered as Customers by TVA: The 8.7 million residents and 650,000 businesses and industries of its service area.

Power Demand

Power Sales: In FY 2006, TVA sold more than 176 billion kWh and earned a revenue of \$9.2 billion. 2006 power sales 2.8% less than planned

Peak Demand:

Record Peak: 32,037 MWe on 7/20/06

2006 Peak Sales: Bought 20 MWe to meet peak demand: 11% of total power supply. Cost of \$1b. Enough to supply 1.26 million homes.

Combustion Turbine Peaking Generators (natural gas and diesel): 15% of FY 2006 generating capacity.

Growth Projections: TVA projects 1.9% growth in power demand annually. By 2030, 54% increase in power demand. Plans to double its nuclear capacity within the decade to meet its projected growing demand.

Loss of USEC: TVA's largest customer, USEC (see above), will end its contract in 2012 as it will cease operation once a centrifuge technology being built by USEC begins operation in Ohio. The plant currently uses 3.9% of TVA capacity. TVA states that new demand growth will replace USEC's load.

Capacity: Through most of the year, TVA has more than enough power generation available. But it intends to add more power plants to meet those peak periods during the hot summer afternoons or very cold winter mornings when usage spikes.

TVA Nuclear Program

National N-Program

103 plants at 66 sites

Since Three Mile Island in 1979, no new plants ordered

Utilities have plans for another 39 units

DOE estimates 50 new plants needed to meet the 2030 energy demand

Energy Policy of 2005 - provides loan guarantees, risk insurance, and tax credits to power energy supply that avoids green house gasses.

NuStart LLC is a consortium of utilities to which TVA belongs. Its purpose is to test DOE's fast-track licensing procedures

TVA's First Nuclear Campaign: 1972 - 2007

Simultaneous construction of 17 n-plants

Generated \$27.7 billion debt

Cancelled or mothballed 8 reactors when power demand failed to meet TVA's projections

Shutdown entire nuclear program in 1985 due to safety concerns

TVA's Current Program

Six plants at 3 sites

Produced 19% of FY 2006 generating capacity

Operate at 90% capacity

Sequoyah Site - 2 units

Browns Ferry Site - 3 units

Unit 2 - shutdown in 1985 and back online in 1991

Unit 3 - shutdown in 1985 and back online in 1995

Unit 1 - shutdown in 1985 and back online in 5/07

Scene of the 1975 fire - a worker using a candle to check for air leaks ignited insulation near the control room. Safety systems failed and a serious mishap narrowly avoided. Shut down for a year for a \$10 million repair. Considered the worst n-accident prior to TMI.

\$1.8 billion of operating funds used to upgrade the unit

1185 MWe - increased TVA capacity by 3% (650,000 homes)

110 miles south of Nashville

Watts Bar I - 1160 MWe

Took 23 years to build (1973-96) at a cost of \$6.9 billion

Due to safety concerns identified by whistle blowers, NRC required TVA to do extensive rewiring and pipe rewelding.

Produces tritium for weapons program.

TVA's Second Nuclear Campaign

Stated goal - to have the largest n-program in nation

Increase share of generating capacity to 41%

Plans to spend \$18.5 billion by 2019 for plant upgrades and new plants

Sequential construction

Watts Bar 2

Started in 1973 and mothballed when half-finished in 1985.

2001 - TVA wrote-off \$1.7 billion in costs related to early construction

TVA board commissioned \$20 million study for unit's completion: Bechtel, Sargent and Lundy LLC, and Washington Group.

Due for board review in 8/07

Anticipated to come online in 2012 with 1160 MWe

Estimated cost for completion: \$2 - \$3 billion

Completion of an older design that was never finished - similar design of WB1

WB2 VP - Masoud Bajestani

TVA has an existing construction permit but would need to apply for an operating license - subject to public hearing process.

Supplemental EIS for completing unit out for public comment in 4/07

Bellefonte (Hollywood, AL)

Construction began in 1970 but never finished

Planned completion date for first of two units - 2016

Chosen by **NuStart** for two as yet untested Westinghouse AP - 1000 MWe units. Will split with DOE the \$50 million in licensing fees.

3-year approval process

Nuclear Waste

BF site: 1400 MT of high level radioactive waste stored in an elevated pool inside plant
37 MT stored outside on TN River in dry cask storage

Sequoyah site has a full inside storage pool and an additional outside dry cask storage

WB will need to dry cask storage in 12 years

Long term storage unavailable. Yucca Mountain plans for operation in 2017.

Nationally: 55,000 MT. Increasing 2000 MT annually.

Thermal Pollution

NPDES Permit - cannot discharge water warmer than 86.9 degrees F.

January to March 2007: driest three month period in 118 years. Rain 67% of normal. 27.8% reduction in hydro power.

TVA Coal Program

Provides 49% of FY 2006 generating capacity. 11 plants with 59 units.

Emission Reduction

TVA ranks fifth among electric utilities in CO2 emissions.

As of 9/2006, TVA has spent \$4.6 billion to reduce emissions at its coal plants.

Expects to spend another \$1.2 billion by 2010

Since 1977, has reduced sulfur dioxide emissions by 80%.

Since 1995, reduced nitrogen oxide emissions during summer ozone seasons by 81%.

Appeals Court sent back to Knoxville District Court a North Carolina suit against TVA after it found the statute of limitations had not run out on alleged emission violations at the Bull Run plant (Oak Ridge) and the Colbert Fossil plant (Tuscombie, AL.)

Decommissioning: 10 of 59 coal units candidates for decommissioning within the next 10-20 years.

Climate Vision Voluntary Initiative: TVA supports its call for an 18% reduction in greenhouse gas intensity by 2012.

Southeast Regional Carbon Sequestration Partnership: TVA is working with Electric Power Research Institute to investigate technologies for carbon dioxide capture and geologic storage.

Transmission

17,000 miles of line.

Energy Conservation and Renewables

Hydro - 17% of FY 2006 generating capacity. 29 hydro plants with 109 units.

Solar, Wind, and other Renewables: Source of less than 1% of TVA's generating capacity

Green Power Switch - wind farm in Anderson County

Methane gas site in Memphis

Customer solar sites across the Valley

Statements made by TVA's CEO Tom Kilgore:

Conservation and renewables have a high rate of cost to output.

Renewables and conservation cannot satisfy a market growing nearly 2% annually.

Conservation programs are less than one-third the cost of additional n-power (responding to a questions of Rep. Jim Cooper.)

Federal Energy Policy Act of 2005: Required utilities to demonstrate new ways to calculate energy bills

Time-Based Smart Metering - meter gives hourly readings to charge customer cost of electricity based on its availability. TVA doing time-of-use pricing options for some Chattanoogaans.

Net Metering - customer generation and sale of surplus power back to TVA.

2007 Strategic Plan - includes plan to conserve 500 - 1000 MWe over the next 12 years - about one year's worth of project demand growth.

Kathryn Jackson, Office of Environment and Research (reports directly to Kilgore)

Responsible for energy efficiency, renewable resources, load shaping

Member of EPRI board

Louise Gorenflo prepared this fact sheet, the 20th in a series to encourage civic involvement in community problem-solving. Contributions made to The Learning Community are tax deductible. You may send your contributions to or request information from The Learning Community at 184 Hood Drive, Crossville TN 38555 (484-2633.)