Tennessee Valley Authority

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Conference/Event: Messner
Overview

- Purpose
- Location
- TVA timeline
- Power Generation
- Political
- Economic Impact
- Environmental Impact
- Social Impact
- Recent Developments
Purpose

- Deal with problems affecting the Tennessee Valley
  - Flood control
  - Replant forests
  - Cheap electric power
  - Improve navigation along the Tennessee River
- TVA Act was signed in 1933 by Franklin D Roosevelt
Location

Source: tva.com
Time Line

- **1930’s:**
  - Developed fertilizers and taught farmers to improve crop yields.
  - Replanting of forests
  - Electricity generation from dams in the area
  - Electricity drew industries into the area

- **1940’s**
  - World War 2 & the need for aluminum, therefore energy
  - Largest hydropower construction project at the time
  - Employment 28,000
  - Electricity generation from dams in the area

- **1950’s**
  - 650 mile navigation channel that was the nation's largest energy supplier

- **1960’s**
  - Began construction of nuclear power plants as more economic source of power
Power Generation

- Sources: hydro, fossil, nuclear & renewable
- 29 hydro electric dams; 11 coal fired (2 combined cycle, 8 combustion-turbine); 3 nuclear; 16 solar power sites; 1 wind power site; 2 diesel generator sites, 1 pumped-storage plant; 1 digester-gas site; 1 biomass co-firing.
- 15860 miles of transmission lines; 1070 interchange and customer connection points
- Serves 7 states: Tennessee, Georgia, Mississippi, Alabama, North Carolina, Kentucky, Virginia
- Generates more electricity than any other public utility in the US
Political

- Henry Ford and Senator Norris argue about public ownership of the Wilson Dam in Alabama.
- 25 year struggle over TVA between republicans and democrats about financing and funding. TVA asked to issue its own bonds and use its operating budget to repay the US treasury $1 billion it had invested.
- Surrounding states and senators didn’t like the fact that if TVA no longer had financial restraints it would be able to sell cheaper power to their customers.
- Bill allowing TVA to issue bonds (sales area limited to areas it served in 1957).
Economic Impact

- In 2008 attracted & retained 41k jobs
- $5.5 billion in capital investment
- In 2008 ~half a billion $ paid to state and local agencies in taxes
- Offers capital investment loans for new & growing businesses, small & minority business support
- $2.5 billion in tax equivalent payment 2001-2008
- Barges on river carry 50 million tons of goods annually
Economic Impact 2

- Self-supporting receives no government aid
- Sells TVA bonds & notes for finance to investors in 60 nations and all states
- Bonds backed by TVA power not the government
- Bonds receive highest credit ratings from major rating agencies
- 1999 bonds interest rate reset from 5.174% to 4.5% in May 2009
- In 2008 $22.7 billion outstanding (statutory limit of $30 billion)
- Bonds are traded on the stock market as TVE and TVC
Economic Impact 3

Source: New York Stock Exchange (TVE)
Economic Impact 4

Source: New York Stock Exchange (TVE)
Environmental Impact

- 49 dams + reservoirs along 652 miles of Tennessee river
- Manages 293k acres of public land
- 34 Flood control dams
- $5.5 billion invested 1977-2010 to reduce air emissions from power plants
- Water from river system used to cool power plants
Environmental Impact 2

Environmental Impact 3

SO2

NOx

CO2

Source: http://www.tva.gov/environment/air/index.htm
Environmental Impact 4

The amount of coal byproducts recycled

Source: http://www.tva.gov/environment/air/index.htm
Environmental Impact 4

- Clean Water Initiative
- Clean Marina Initiative
- Clean Boating campaign
- Tail water improvements (~$60 million)
- Reservoir ratings:
  - Reservoir ecological health
  - Stream ecological health
- Sport fishing ratings (based on the fish population)
Social Impact

- In the 1930’s ~30% of the population affected by malaria
- Development of Dams displaced 15000 families
- Cheap electricity made life easier for farmers and more productive
- Increase/improvement in public infrastructure as more people moved into the area
- Number of women in the workforce increased
- Recognized unions for skilled and semi-skilled blue collar employees.
- A class action lawsuit was filed against the agency claiming sexual discrimination
Recent Developments

- Coal ash spill in Roane county Tennessee (Dec 2008)
- Cleanup cost ~ $1.2 billion
- Devastated property values
- Property buyout $40.2 billion
- Stopped tourism + dislocation of retirees
- $43 million to be spent on economic development
- Ratchet Bonds (bond rates can be reset after years depending on market conditions).
Results of Recent Developments

- Renewed interest in the regulations for coal ash within the EPA and TVA
- EPA Survey of ash ponds and subsequently renovation of these ponds
- Classification of ash: hazardous/non-hazardous
- Identification of groundwater contamination
- Even with lower interest rates for ratchet bonds there has not been a decrease in the demand for the bonds
Results of Recent Developments 2

Source: Google images
References

- TVA.gov
- NYSE.com
- Katz, David; (2009), The Power of the Callable Bond, CFO Research Services, [http://www.cfo.com/article.cfm/13090515/1/c_13090433](http://www.cfo.com/article.cfm/13090515/1/c_13090433)