Water-Energy Interrelationships: A Municipal Perspective

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The Southern Nevada Water Authority (SNWA) is a cooperative agency formed in 1991 to address Southern Nevada’s unique water needs on a regional basis.

SNWA officials are charged with managing the region’s water resources and providing for the Las Vegas Valley’s present and future water needs.
Regional Water Treatment and Delivery

• Requires 900,000 MWh of electricity annually.

• Single largest use of electric power in the region.

SNWA Member Agency pumping station
Maintaining Reliable Supplies

The SNWA’s strategy to ensure reliable energy supplies at a stable price includes four basic principles:

1. Minimizing market price risk

2. Maximizing operational flexibility

3. Diversifying the SNWA’s energy resources.

4. Increasing use of renewable energy.
1. Risk Minimization

The SNWA procures resources in a manner that minimizes its market price risk.

Current Energy Resources

- **Silverhawk Generating Station**
  25% share in the power plant

- **Hydropower Resources**
  25 MW of hydropower resources from the Hoover and Parker-Davis Dam Projects

- **Non-Renewable Market Resources**

- **Renewable Generation**
Silverhawk Generating Station

- Natural gas-fueled generation
- Generates 560 megawatts
- Utilizes dry-cooled technology
- Uses 90% less water compared to a typical station of the same size
2. Operational Flexibility

SNWA operations are modified to utilize power resources when they are the least expensive.

- SNWA pump operators fill reservoirs during non-peak hours, thereby shifting electrical demands to times when electricity prices are lower.

- The SNWA must still provide water to its member agencies during peak hours, and therefore has an obligation to ensure sufficient power resources are available when needed.
• The SNWA is one of the founding members of the Silver State Energy Association (SSEA).

• By participating in the SSEA, the SNWA can develop, own and operate power facilities and access the generated electricity to support operational needs.
  
  – Helps to insulate the SNWA and its member agencies from spikes in the energy market.
  
  – Increases overall reliability.
3. Diversification

Diversification is critical to developing a balanced energy portfolio that minimizes price variability and ensures reliability.

• Purchasing firm power from a variety of utility systems that are geographically dispersed.

• Partnering in the development of a gas-fired generating station.

• Acquiring a contract for hydropower resources from the federal dams along the Colorado River.

• Developing a renewable energy program.
4. Renewable Resources

SNWA has set a goal of meeting 20 percent of its energy needs through renewable sources by 2015.
Current Renewable Energy Resources

Federal Hydropower
Total Capacity: 25 MW

Horizon Ridge Energy Recovery
Total Capacity: .67 MW

Sloan/Linden Energy Recovery
Total Capacity: 1.45 MW

Solar Covered Carports
Total Capacity: .25 MW

Solar Covered Carports at Alfred Merritt Smith Water Treatment Facility
Planned Renewable Energy Resources

CWC Hydroelectric Project
Projected Capacity: 10 MW

Solar Photovoltaic Demonstration
Projected Capacity: .222 MW

Arrow Canyon Energy Recovery
Projected Capacity: .45 MW

Groundwater Project Pipeline Energy Recovery
Projected Capacity: 40 MW

Geothermal
Projected Capacity: 15 MW

Wind
Projected Capacity: 15 MW

Biomass
Projected Capacity: 5 MW

The SNWA continues to work towards renewable energy resources, such as wind resources.
Municipalities have a responsibility to deliver water to our customers.

A reliable system for water treatment and delivery is dependent on a stable and reliable power supply.

To accomplish this, we:

- Minimize market price risk.
- Maximize operating flexibility.
- Diversify energy resources.
- Increase the use of renewable energy.