GreenChoice Repurposing Proposal

Resource Management Commission

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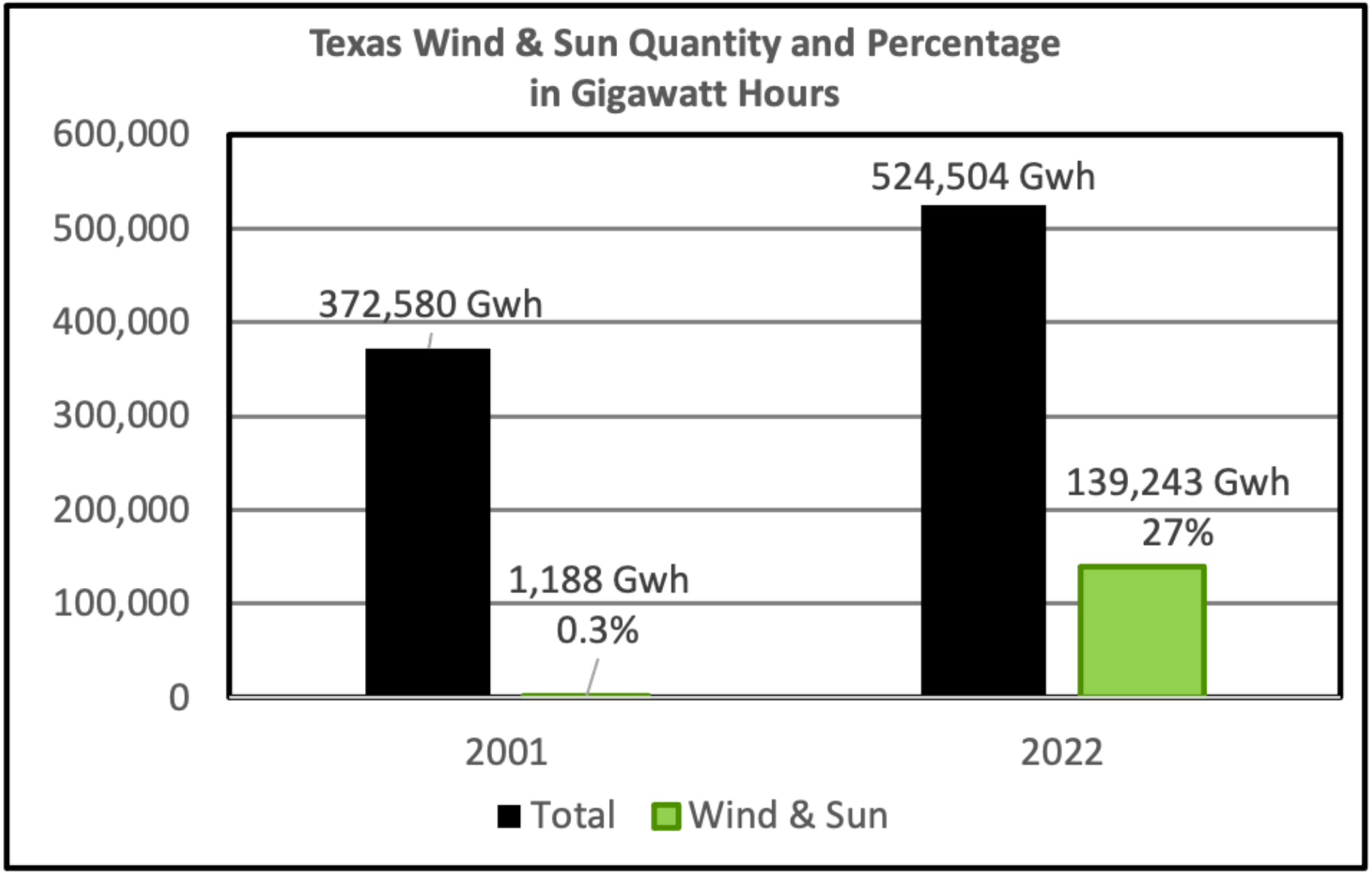
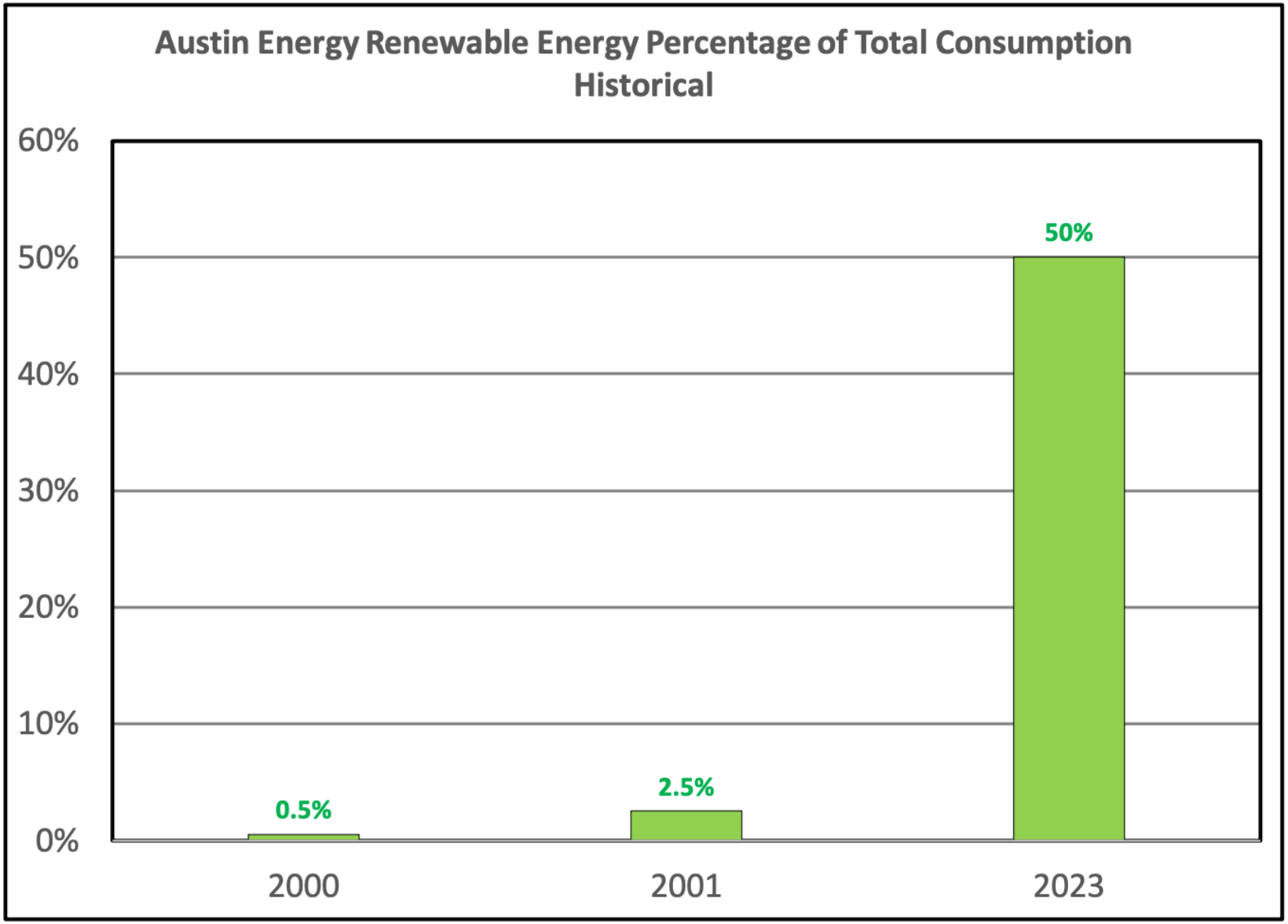
AUSTIN ENERGY® | GreenChoice®

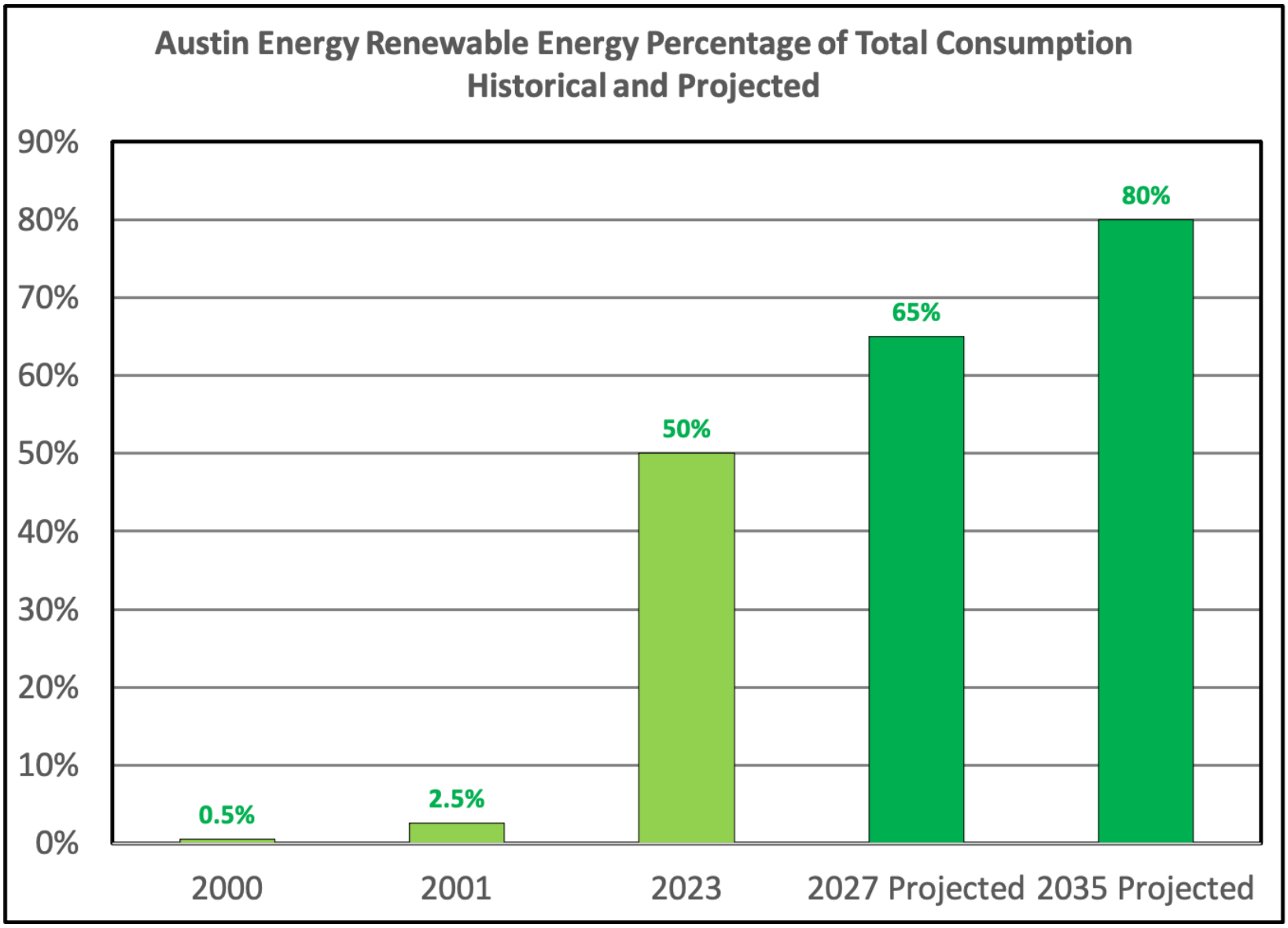
- Started in 2001 to Allow Customers to Virtually Buy 100% Green Power
- Currently 0.75¢/kwh More/ About 6% Increase in Total Bill
- 984 Million Kwh Sold in 2022 / 7% of Total Austin Energy Consumption
- About $7.4 Million in 2022 Additional Revenue
- About 28,000 – 5% – of 2022 Customer Base



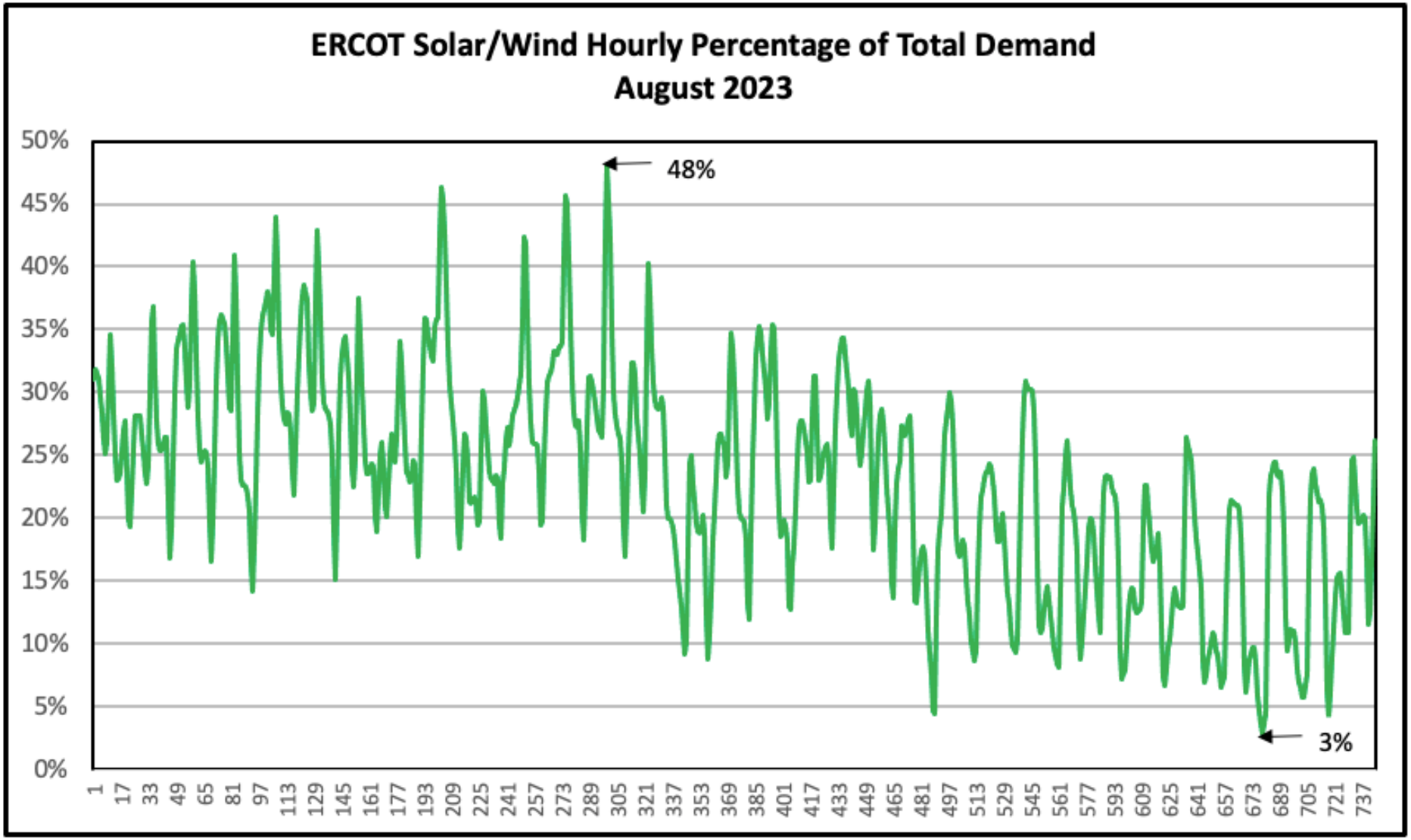
Wind & Solar Increased 117 Times Since 2001
On Track to Reach 32% in ERCOT in 2023



In Austin, Renewable Energy has Increased from Almost Nothing in 2000 to Half Of Electric Supply in 2023



And It is Projected to Hit About 80% by 2035.



But All the Renewable Energy in the World Will Not Allow It To Be ”Dispatchable” – To be Used When It Is Needed

Why Should We Ask Customers to Pay More for What the Utility Is Doing Anyway?

GreenChoice Was Never Intended to Last

AE General Manager Roger Duncan expressed doubts about the future of a program that attempts to separate green and brown power. "It was our intent to stimulate the market for renewables…It was never intended to go on forever."

The Austin Chronicle, November 10, 2010

To Get Greater Renewable Percentages, ERCOT Needs More Transmission and Dispatchable Renewable Power, Including Energy Storage

What are the Possibilities to Repurpose GreenChoice Money?

Lithium Ion Batteries are the Standard Today
But Several Problems

1. Expensive Metal in High Demand
2. So Expensive That They Are Only Used for Short Time Periods
3. Metal Usually Imported, With Supply Concerns
4. Fire Suppression Systems Add Additional Expense
5. Degradation Before End of Life
6. Need Energy-Consuming Heating and Cooling
7. Cycling Limitations

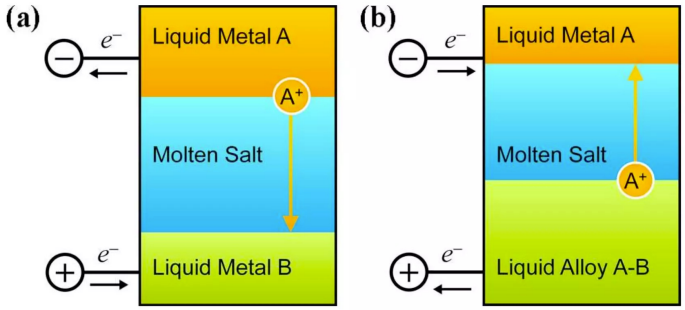
Eos – Zinc/Bromine Battery
Inexpensive Materials That Can Operate at Most Ambient Temperatures

Company Direction

- Long-Term Goal of 3 to 12 Hours Per Installation
- 35 Mwh project on California Indian reservation
- 39 Gwh in queue worth over $10 Billion

Ambri – Liquid Metal Calcium/Antimony Battery
Heated to 500˚ C to Create Chemical Reaction to Store Electricity (Not Heat)

CHARGING AND DISCHARGING



- Discharging

Charging

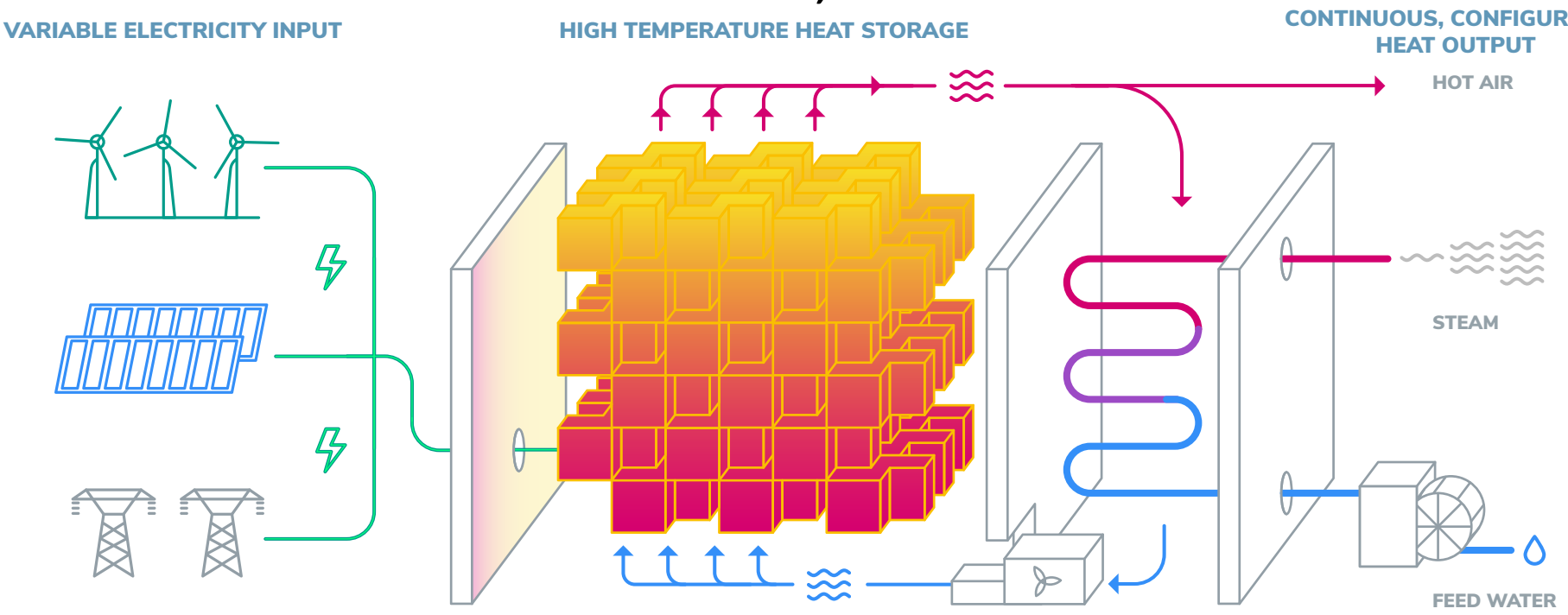
U.S. Pilots

- **Microsoft Data Center**
- **Xcel 300 kwh in Aurora, Colorado**

Major (Megawatt) Interest

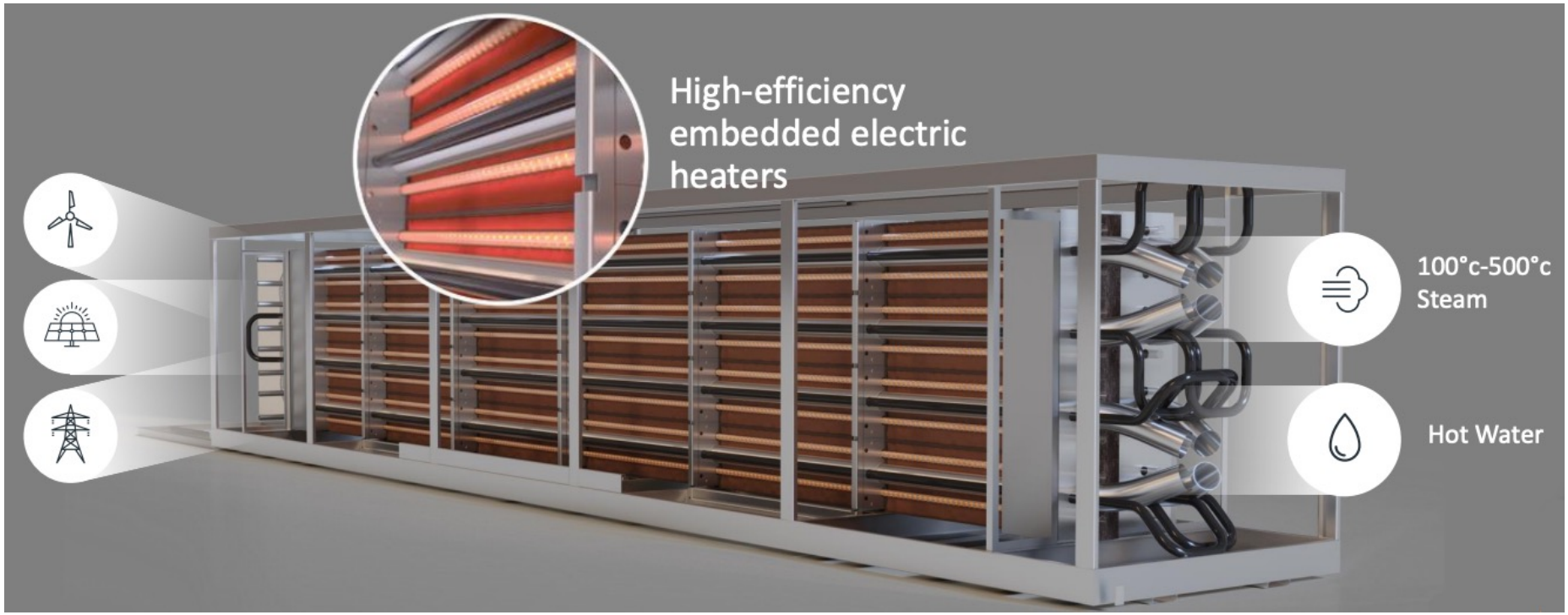
- **South Africa**
- **India**

Rondo Energy – Aluminum, Silica, Oxygen Refractory Bricks
80 to 1,500˚ C



Calgren Ethanol Plant
Industrial Process Heat

Brenmiller Energy – Volcanic Rocks
350 to 750˚ C



Enel
Italian Power Plant Steam Turbine Supplement
24 Mwh of Heat Storage

Leveraging Funds

- 20% from Austin Energy
- 20% from Storage Company

Balance from:

- Grants (Federal, State, Non-profit)
- Other Utility/Government Partners
- Private Investors

Governance

- **Placement in Administrative Department of the Austin Energy (Possibly Technology and Data Division)**

- **Academic Partner/Consultant for Technical Evaluations of Projects**

- **Council Approval for Annual Workplan with Commission Input**

Public Outreach

- **Polling of GreenChoice Subscribers and the General Public to Gauge Support and Determine Best Messaging**

- **Possible Public Hearing or Hearings to Gain Insight into New Technologies and Approaches**

Arbitrage

Example:

1.5¢ Overnight Power ⟷ 50¢ Peak Demand 5 PM

Perhaps New GreenChoice Program Can Deliver A "Dividend" to Subscribers

Equity

Austin's Carver Library Solar System