Successful Outsourcing of a University Energy Infrastructure and Development of CHP Project

Rich Kessel

President and CEO
Trigen Energy Corporation

University of Maryland Profile

- 32,000 Students
- 1,350 Acre Campus
- 160 Georgian Style Buildings
- 11.5 Million Square Feet
- Premier Public Research University in Maryland

University of Maryland Central Heating Plant

- 4 Gas/Oil Fired Boilers
- Converted From Coal in Mid 70s
- All Units over 30 Years Old
- Normal Winter Load: 240,000 Pounds/Hour at 125 PSI

Electric and Cooling Services

- 57 MVA of Electrical Service
- Nearly 30,000 Tons of Cooling Load

Campus Energy Systems

- Campus facilities master plan calls for adding 3.4M GSF between 1990-2004
- Precipitated need to study utility infrastructure; $45M in urgent renewal needs identified
- No support for University System or State of Maryland debt issuance
  - That is: Operating budget must amortize debt
  - Further off-balance sheet financing required
- Encouraged by state agencies to seek privatization solution
  - Pure Privatization
  - Public/Private Partnership

Key Goals

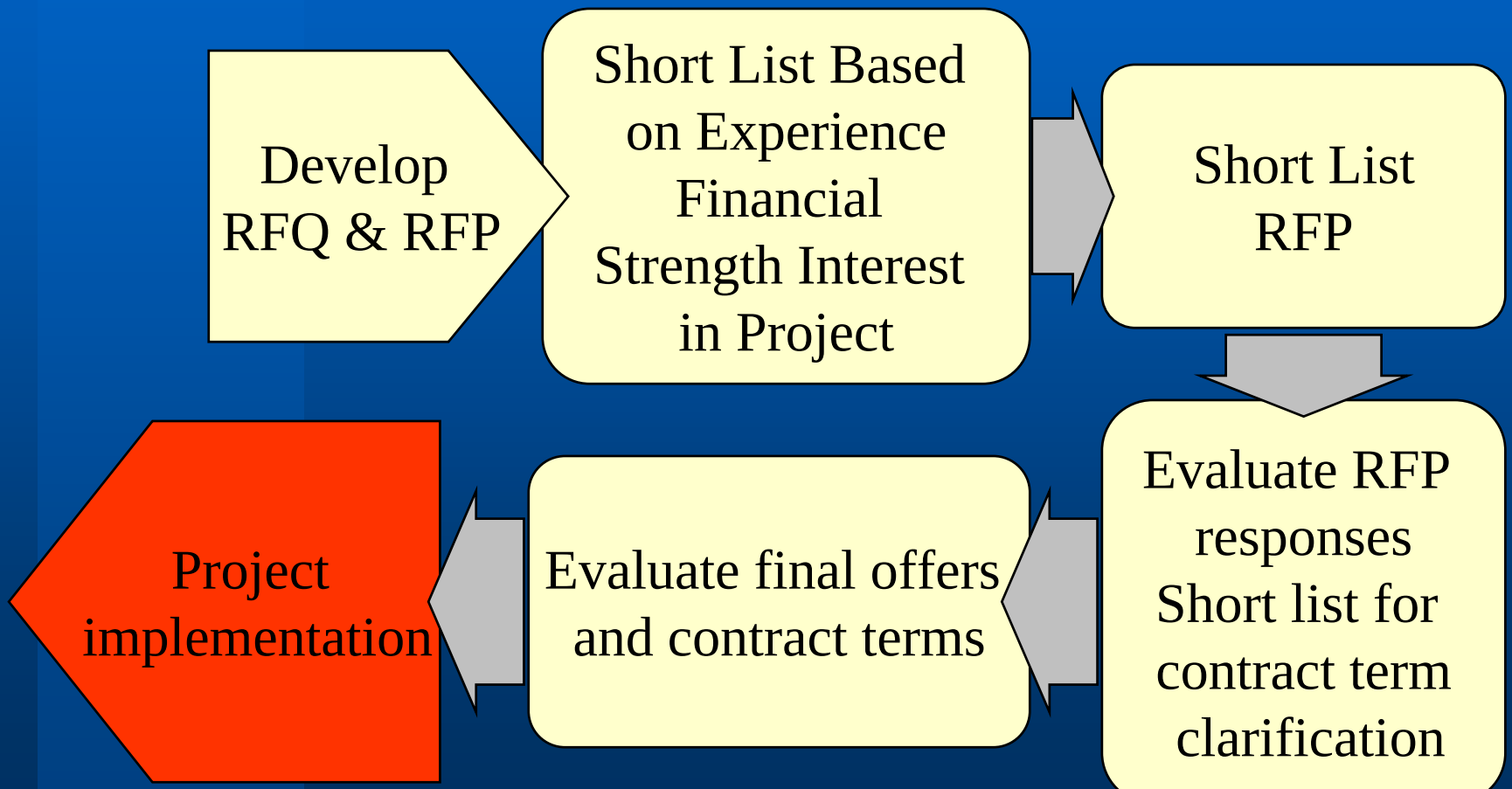
- Must provide sufficient quantities of reliable energy
- Must realize benefits of deregulation
- Must minimize financial risks
- Must advance academic, environmental and social interests

Key Issues Affecting Needs

- Availability/Cost of capital funding
- Impact of deal on UM balance sheet
- Present and future utility consumption profiles
- Opportunities to reduce load requirements
- Impact of utility deregulation
- Impact of NOx emissions in non-attainment area
- Assess institutional expertise and establish development team
- Determine options for existing employees
- Manage interest and involvement of governing board, Governor and State Agencies

Searching for a Partner

The RFQ/RFP Process



Trigen Energy

- **Leading developer, owner & operator of industrial, commercial, institutional & district energy systems in North America**
- **Owns, operates and/or is developing projects in 22 states, the District of ColumbiaCanada and Mexico**
- **Over 800 energy professionals**

Trigen Locations

Trigen Energy in Maryland

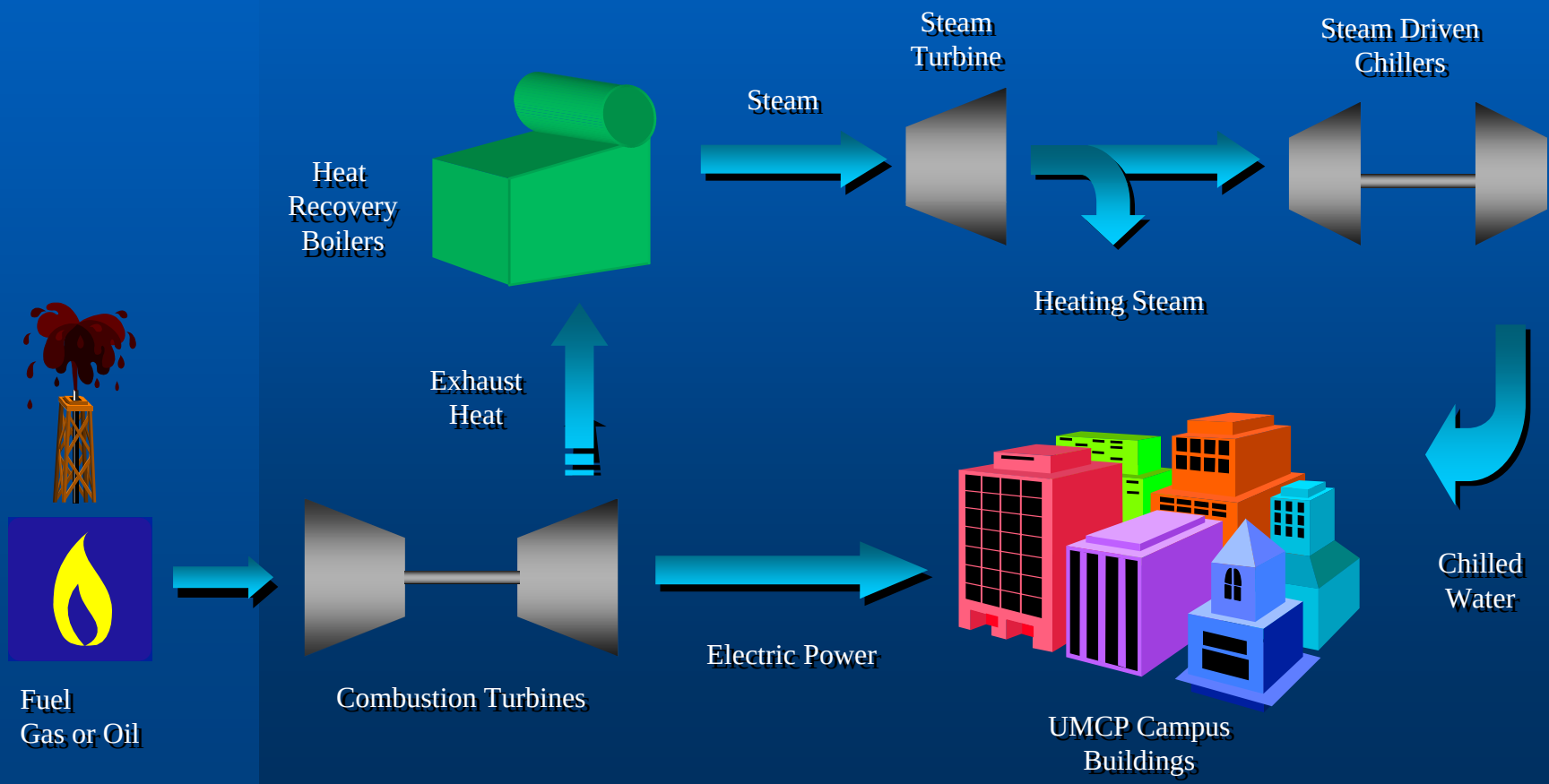
- **Leading developer of innovative energy projects in Maryland**
  - **10 MW CHP project with Millennium Inorganic Chemicals**
  - **11 MW CHP project with Sweetheart Cup**
  - **“Mini-loop” energy services project for Inner Harbor East development**
  - **Downtown Baltimore District Heating system with over 250 connected customers**
  - **High efficiency hot-water boiler project for Cherry Hill Housing Authority**

Our Successful Proposal

- Trigen partnered with Cinergy Solutions
- $71M in utility system improvements
- Energy consumption (BTU's) reduction of 32%
- $120M savings to fund improvements and debt service
- A private/public partnership achieved
- Low cost, tax exempt, off-balance sheet financing achieved

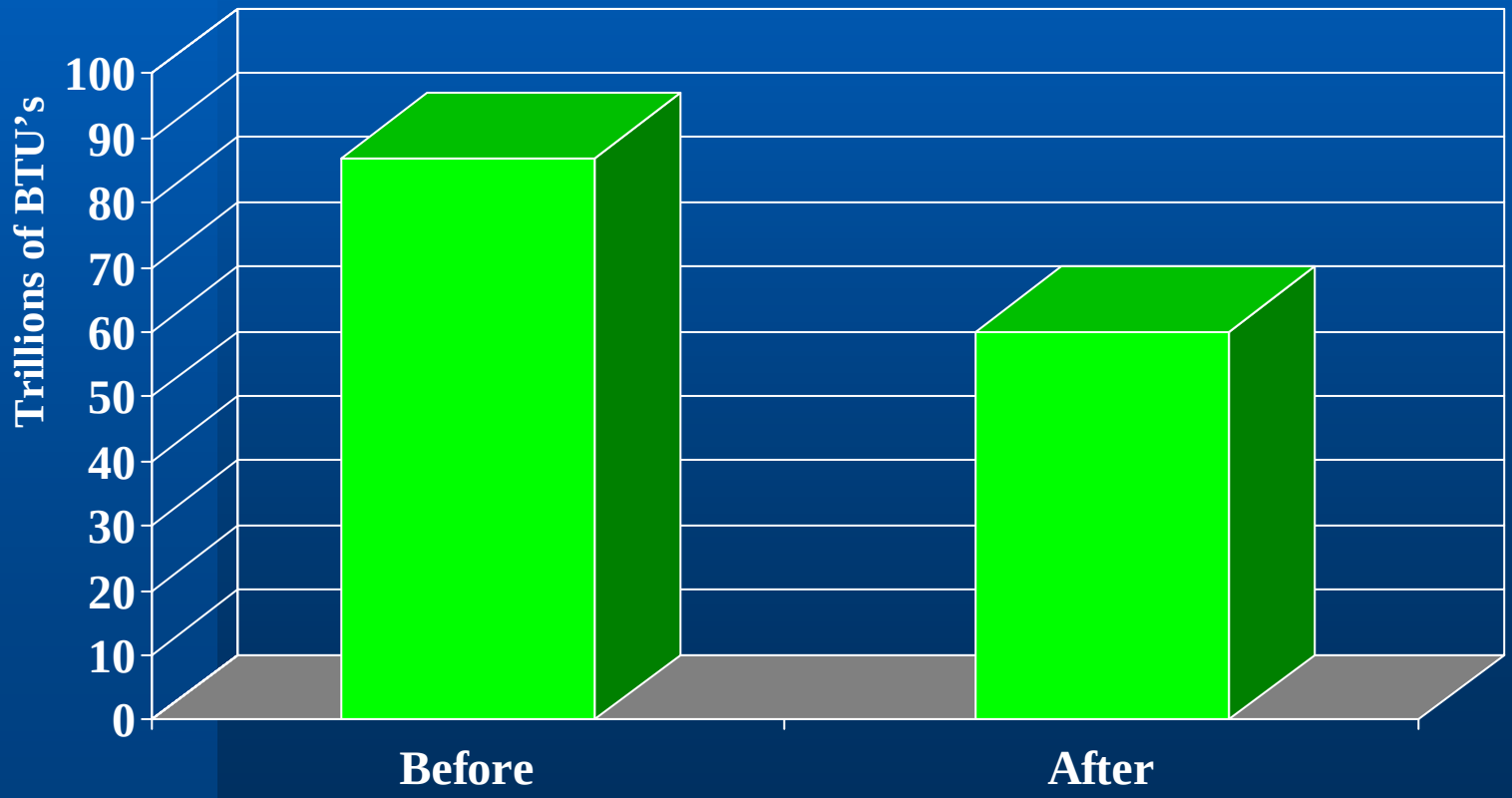
Details of the Deal

Integrated Utility System



Details of the Deal

University's Program Saves Energy Equal to Serving 7,590 Homes for 20 Years

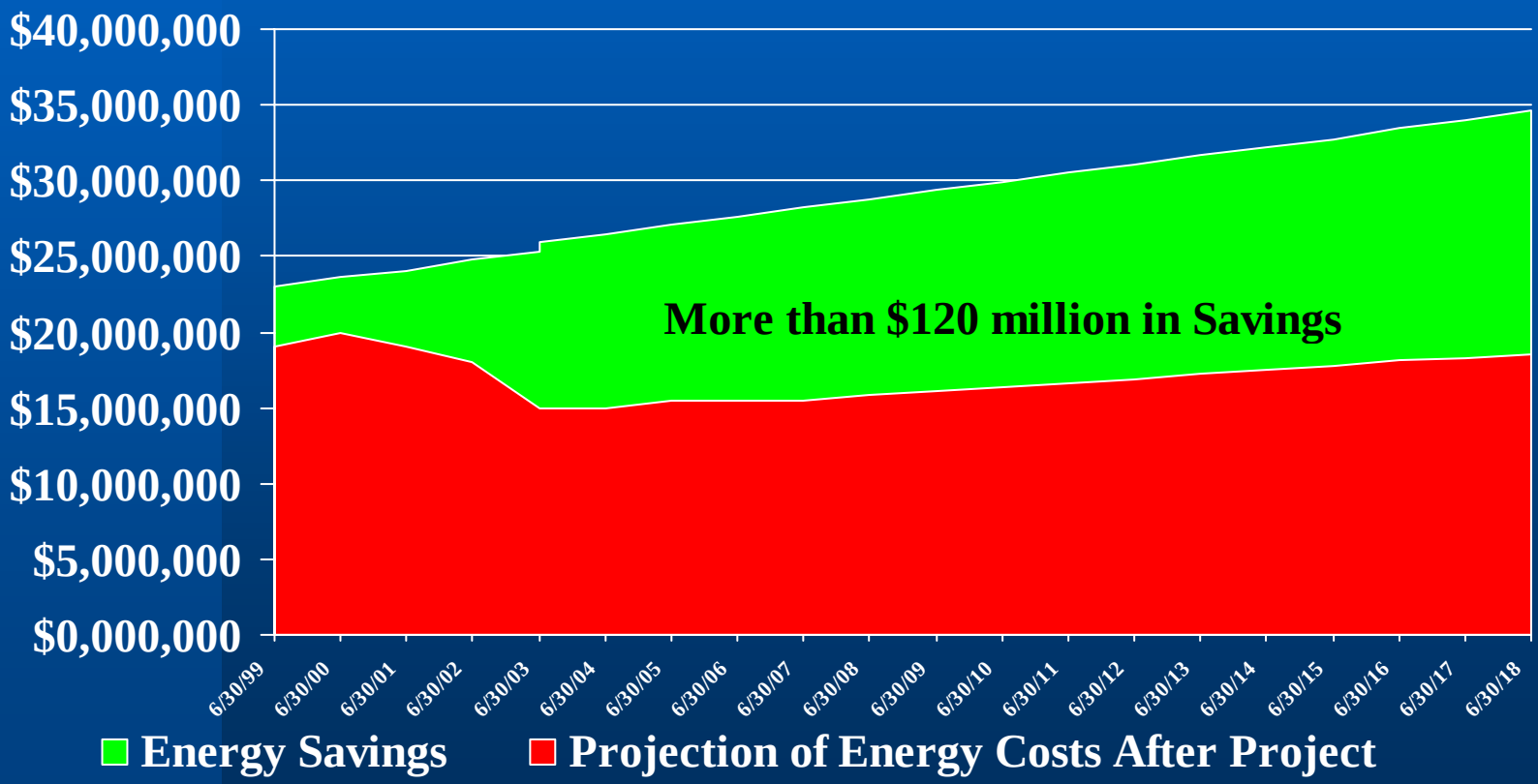


Environmental Results

- **9,800 tons per year of regional NOx emissions eliminated**
- **3.5 million tons of CO_2 over the course of the 20 year contract**

Details of the Deal

Energy Savings Pay for Capital Improvements



"Contracting for utility services at UMCP, which will save an average of $6 million per year, is a major step for Maryland in our continuing efforts to keep educational and energy costs under control"

Paris Glendening

Governor of Maryland

Details of the Deal

- 20 year services agreement, not a lease
- Equipment efficiency, performance and parent guarantees
- No employee lay-offs
- Improvements without latent condition risk and liquidated damages
- Shared risk and savings regarding commodity purchase
- $100K/Yr. Academic internship program

Award Winning Project

- Winner of an award from the National Council for Public Private Partnerships
- Cited for technological innovation in deploying a state-of-the-art CHP system /and/
- It's first-of-a-kind character for the outsourcing of public university infrastructure /and/
- The significant savings for UMCP