Energy Strategic Plan

Los Angeles Community College District

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LACCD Comprehensive Energy Strategic Plan

A Paradigm Change:

1. Efficient Renewable Energy Central Plants
2. Demand Management Through Performance Contracts
3. One MW Solar/PV per campus
4. Sustainable Curriculum Program

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1. Renewable Central Plant

Objectives

1. One Central High Efficiency Sustainable Source for Hot Water and Chilled Water
2. Meet current demand with expansion capability for future facilities and needs
3. Provide power for clusters of buildings
4. Digital Control System

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Central Plant Features

- Solar Heat Tube
  - Hot Water – near steam
- Absorption Chillers (Multiple Units)
  - Chilled Water for Air Conditioning
- Thermal Storage – Ice
- Co-Generation – Electricity and Heat
- Hot Water Boiler / Heater

Vacuum Tube Heat-pipe Collectors and Architectural Design Possibilities

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2. Performance Contracts

- Retrofit all energy consuming elements for maximum efficiency
- Install conservation features in all buildings
  - Insulation
  - Low-E Glass
  - White Roof
  - Green Roof
- State of the art and new technologies
- Metering and Monitoring Systems

Performance Contract Arithmetic

• Electric / Gas Bill Before Energy Measures- Annual	• $1,000,000
• Electric / Gas Bill After Energy Measures - Annual	• $ 800,000
• Difference (Amount Available for Payback) - Annual	$ 200,000

3. One Megawatt Solar / PV

- Private Sector third party to install
- Parking Lots and Roofs
- Hybrid systems with storage
- Future technology innovations

Photovoltaic 3rd Party Arithmetic

- Federal Energy Credit – 30%
- Rapid Depreciation – 25 %
- Utility Incentives – 20 %
- Green Tag Sale – 5% (?)
- Bulk Procurement – 10 % (?)
- 10 Cents on the Dollar !!!

4. Sustainable Development Curriculum

- Use Green Buildings at each Campuses to teach construction and technology
- Certificates, licenses and advanced degrees
- Career opportunities and training for jobs, new companies and advanced degrees

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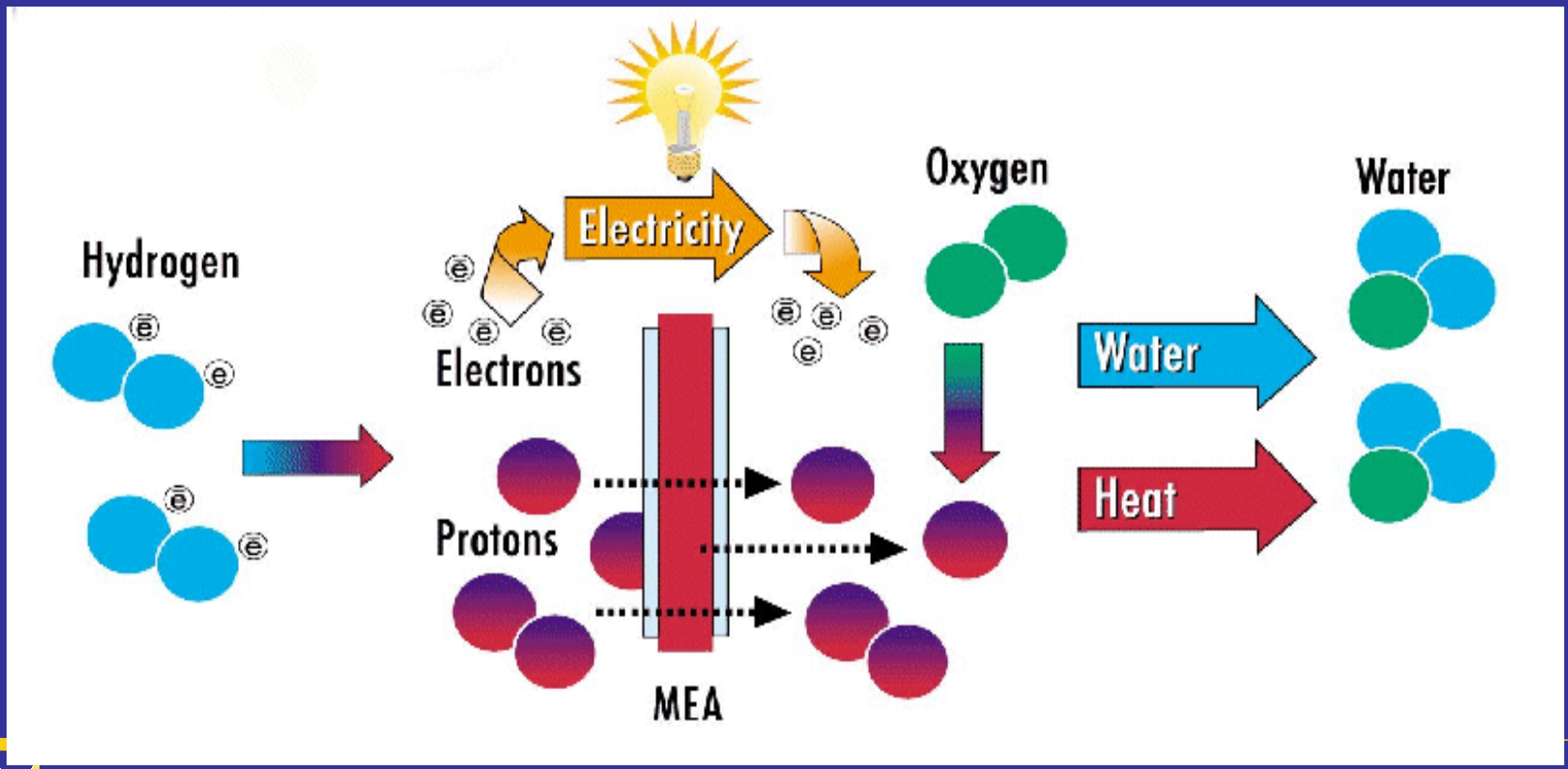
4. **Sustainable Development Curriculum**

- Collaborate with unions, private businesses, public, government and non-profit sectors
- Sustainable Development Curriculum: solar, wind, geothermal, hybrid technologies, economics, new businesses, life cycle accounting, investment, operations and maintenance
- Climate Change

  - the solutions are available today

Fuel Cell Basics

A fuel cell is a device that generates electricity by a chemical reaction



Anaerobic Phased Solids Digestion Technology

An advanced and technically validated approach to the problem of handling a wide variety of problematic organic waste materials

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Wind Mill Power

Costs are competitive with natural gas

- Wind Power uses wind to create electricity
- Accounts for around 1% of California's electricity supply
- On-site wind power
- Case in point: farms and town in N. Europe
- The turbine technology and costs have changed.
- Hybrid Systems and Integrated
- On-site Generation
- *Courtesy of California Energy Commission and Distributed Energy Systems 2006*

Off The Grid !!

- Using current and future Proposition 39 bond resources
- Buy Out
  - Central Plant Loans
  - Performance Contracts
  - Photovoltaic / Fuel Cell Installation
- **No Future Energy Cost !**

For More Information

- Would you like to know more about this session?
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Don’t forget to fill out and drop off your session evaluations!


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