



2011 Sustainability Summary

Presented to
SDCCD Board of Trustees



February 9, 2012



SDCCD 2011 Sustainability Summary

Waste Diversion

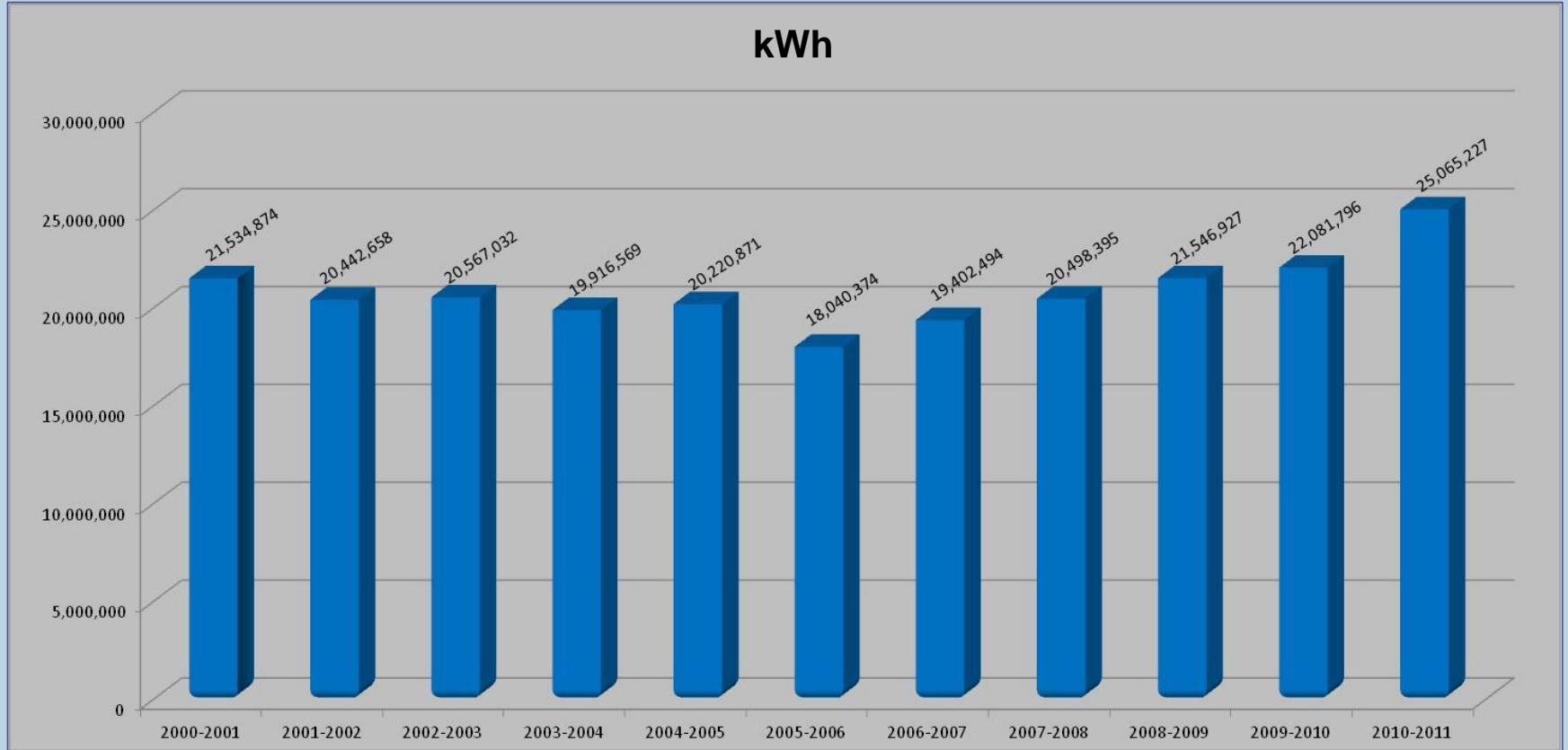
The District continues to divert a significantly higher percentage of its waste stream than the 50% required by legislation.

	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
City College	70.6%	72%	74.3%	80.9%	85.83%
Mesa College	57.8%	59%	66.9%	61.4%	97.06%
Miramar College	61.2%	69.5%	70.2%	89.5%	58.98%
Continuing Education	62.5%	92.4%	87.7%	88.6%	89.27%
District Office/DSC	63.3%	78%	66.4%	59.6%	96.53%



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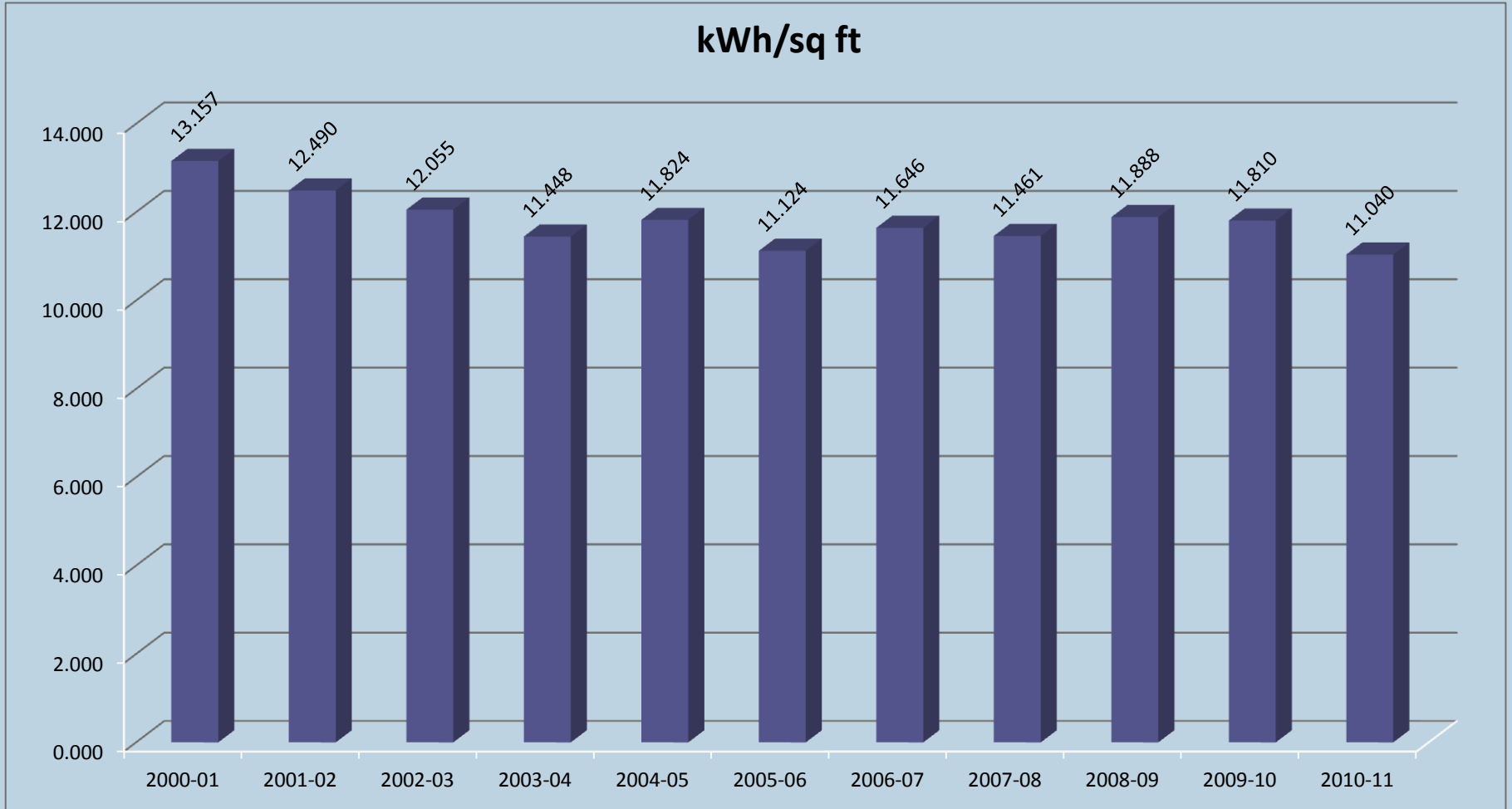
Electrical Usage (2000 – 2011)





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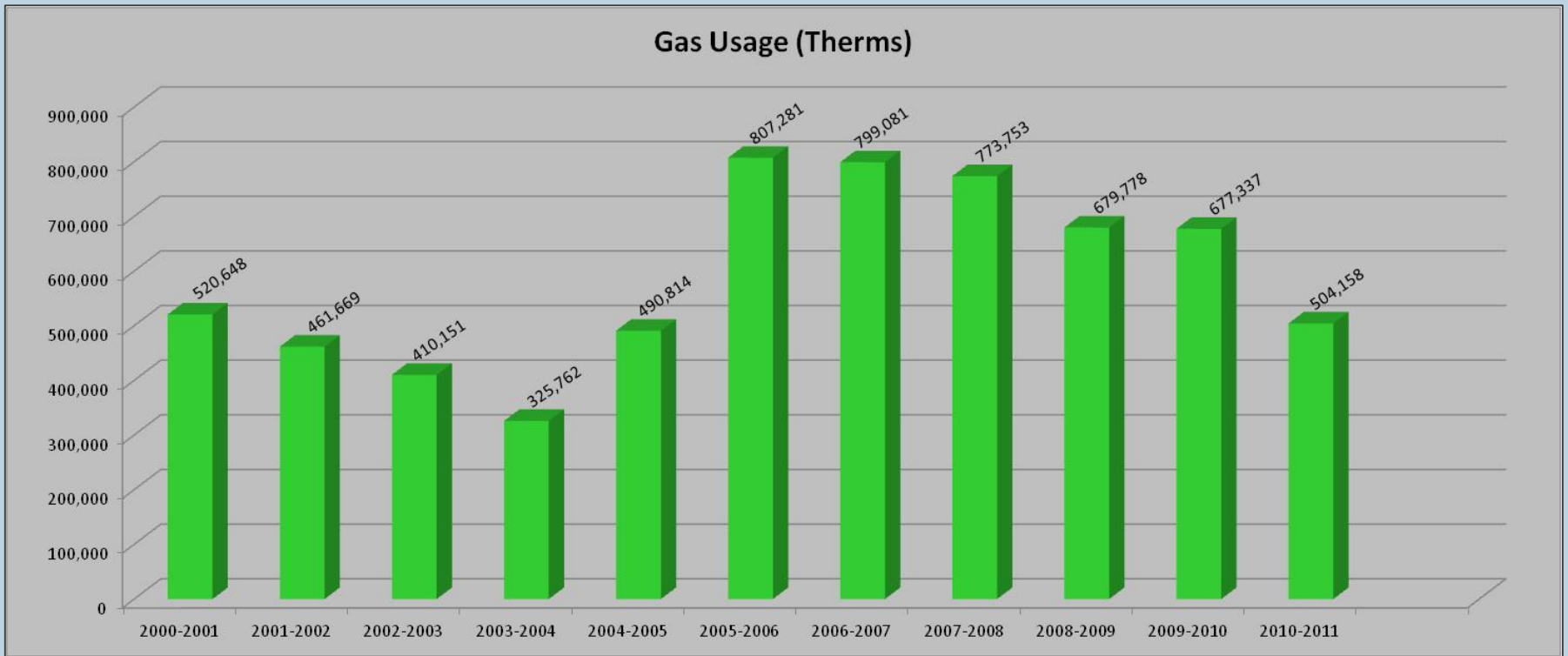
kWh per Square Foot (2000 – 2011)





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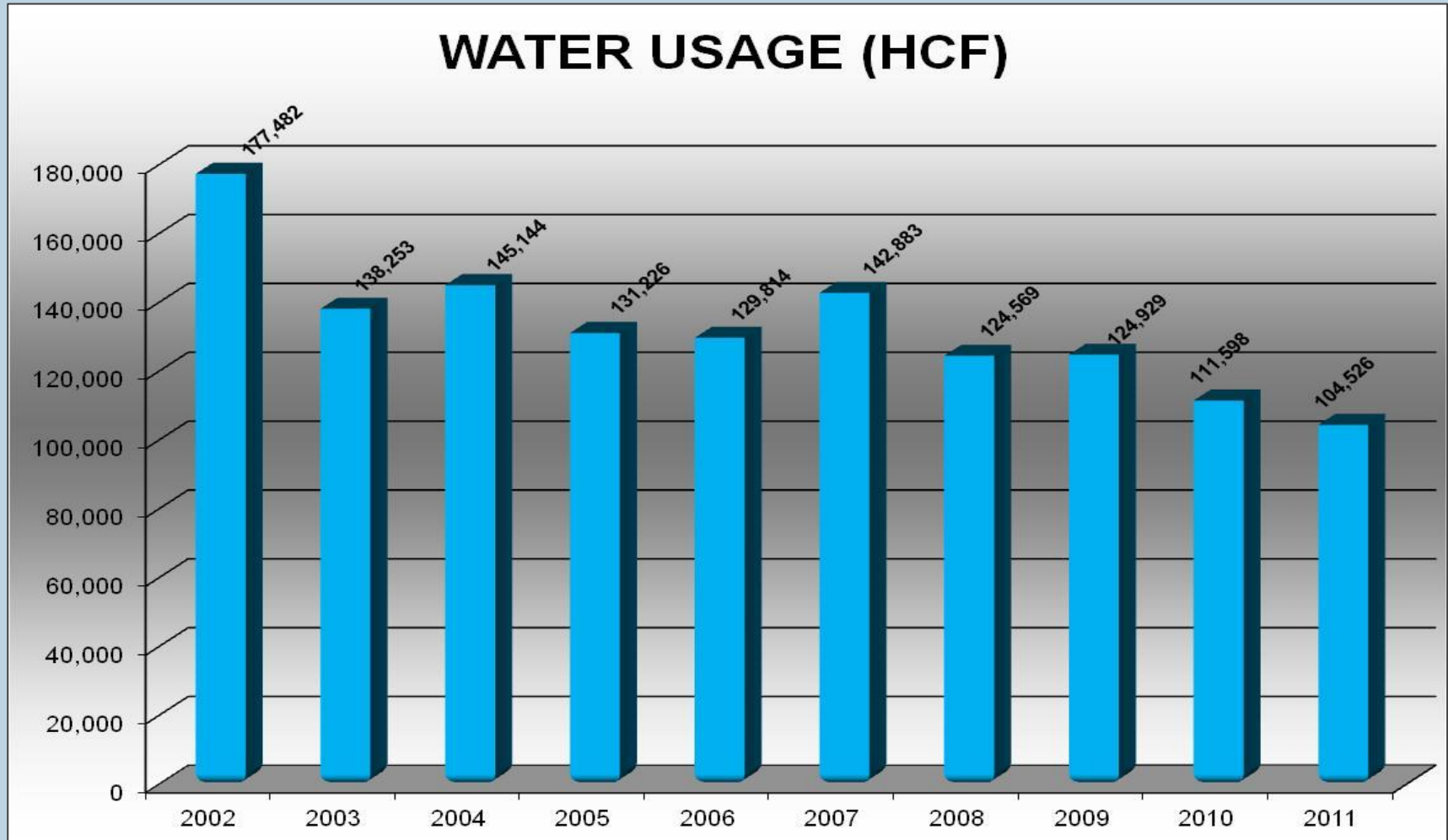
Gas Usage (2000 – 2011)





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Water Usage (2000 – 2011)





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Sustainability Concepts – Solar Initiative

Summary of Borrego Solar Power Purchase Agreement

<u>Site</u>	<u>Type</u>	<u>Annual Production (kWh)</u>
City LRC	Roof	140,060
City Harry West Gym	Roof	257,858
District Office Parking Lot	Carport	422,490
Mid-City	Roof	82,844
Miramar Parking Lots	Carport	1,833,468
Mesa Parking Structure	Carport	303,079
Mesa Parking Lot #1	Carport	590,870
Mesa Parking Lot #2	Carport	<u>848,947</u>
TOTAL		4,479,616

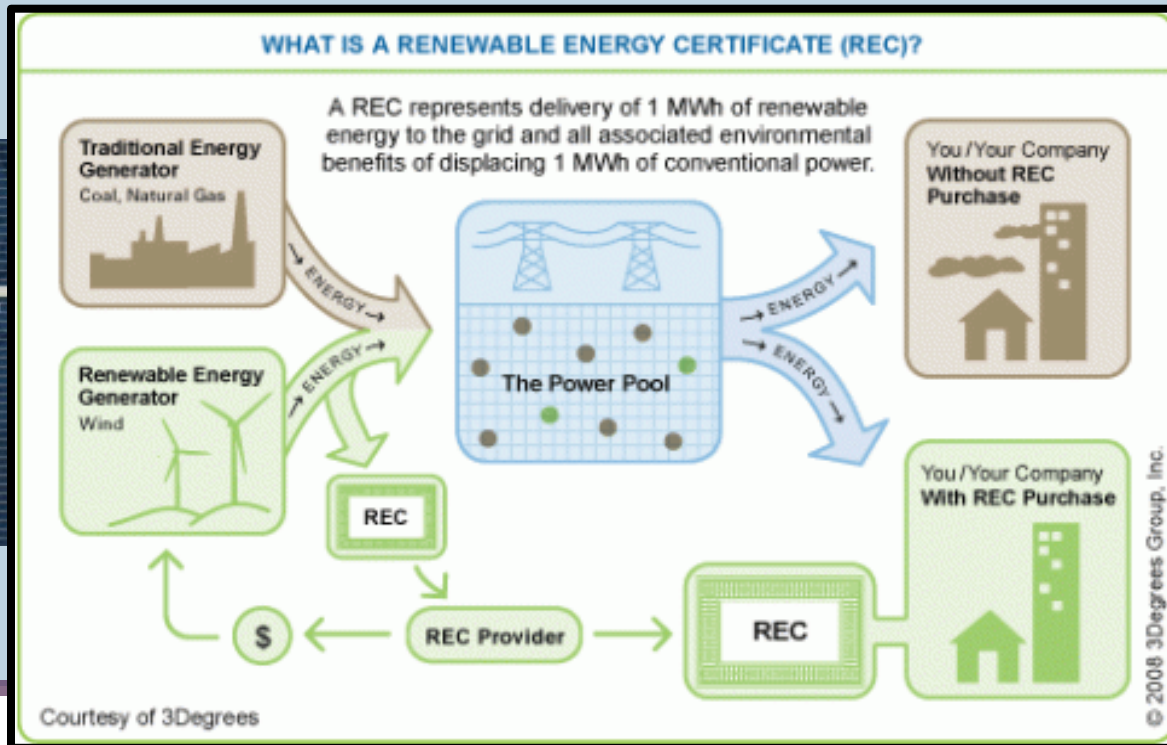


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Renewable Energy and Carbon Offset Credits

By generating solar energy, the District is able to earn **Renewable Energy Credits** – one credit for every megawatt-hour (MWh) of renewable energy delivered to the local power grid.

Current value is estimated at approximately \$60,000 annually.



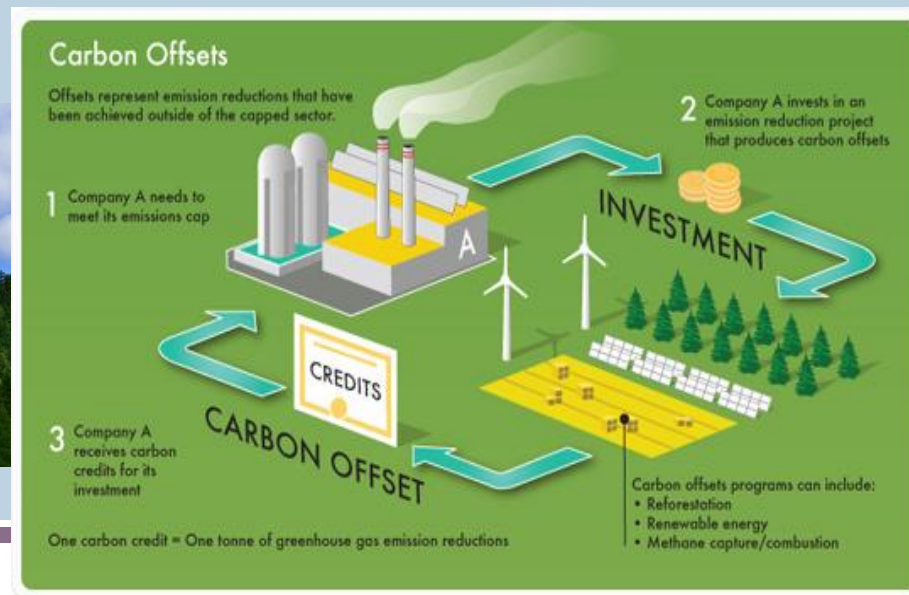


SDCCD 2011 Sustainability Summary

Renewable Energy and Carbon Offset Credits

By reducing generation of carbon dioxide (CO₂), the District is able to earn **Carbon Offset Credits** – one credit for every metric ton of CO₂ reduced.

Credits can be purchased by companies unable to meet caps on the total amount of CO₂ they are allowed to emit under state regulations. Monetary value to be determined via cap and trade marketplace.





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Decommissioning of Cogeneration Plants

- Thermal performance degraded with time
- Operational challenges of absorption chillers with centrifugal chillers
- Reliability of system uptime and impact on demand charges
- Reduced carbon footprint



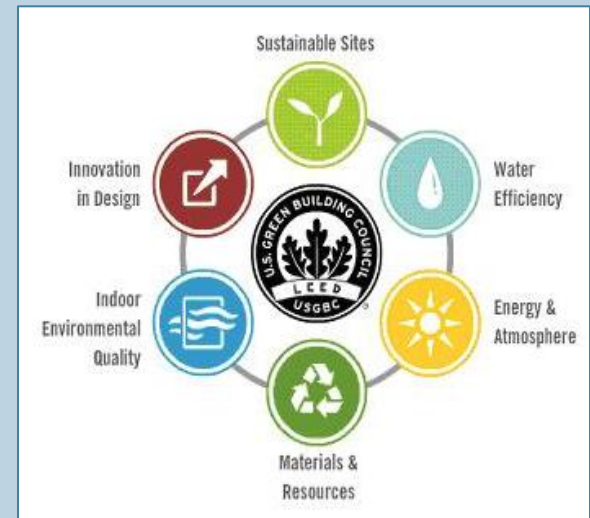


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Leadership in Energy and Environmental Design

LEED is an internationally recognized green building certification system, providing third-party verification that a building was designed and built using strategies aimed at improving performance across all the metrics that matter most:

- Energy savings
- Water efficiency
- Reduction of CO₂ emissions
- Improved indoor environmental quality
- Stewardship of resources and sensitivity to their impacts



The four certification levels include Platinum, Gold, Silver and Basic Certification.



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LEED – City College

LEED Gold – Arts & Humanities Building
Business Technology Building
Career Technology Center

LEED Silver – General Purpose Classroom Building
R Building (Learning Resource Center)
Science Building
C Building
M Building



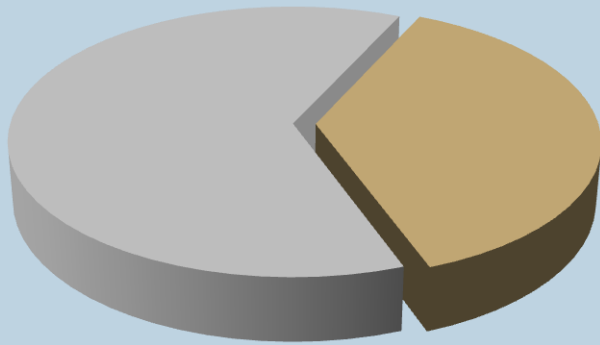
Arts & Humanities and Business Technology Buildings



Career Technology Center



Water Science Building



■ Silver (5) ■ Gold (3)



Math & Social Science Building



R Building (LRC)



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LEED – Mesa College

- LEED Gold** – Allied Health Building
- Mesa College Police Station
- Student Services
- LEED Silver** – Math and Science Building



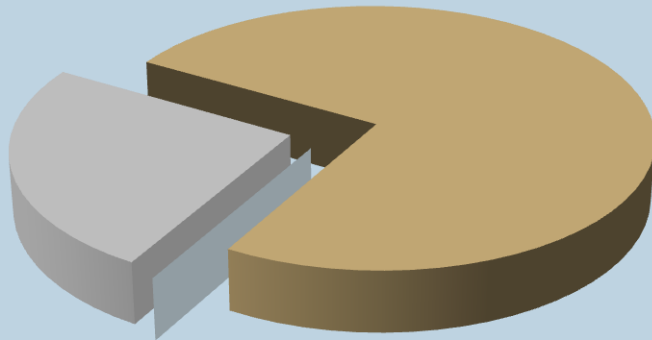
Allied Health



College Police Station



Student Services



■ Silver (1) ■ Gold (3)



Math and Science Building





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LEED – Miramar College

LEED Platinum – Miramar College Police Station

LEED Gold – Aviation Maintenance Technology Center

Student Services Center

Advanced Transp. Tech. Center

LEED Silver – Library Learning Resource Center

Cafeteria/Bookstore

Automotive Technology

College Services Center

Humanities & Arts Building

Math & Business Building

Fire Science/EMT

LEED Certified – Hourglass Park Field House

Aviation Maint.



Adv. Transp. Technology

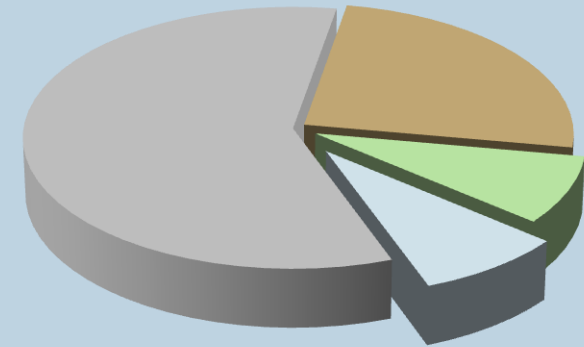


Math & Business



Cafeteria/Bookstore

Police Station



- Silver (7)
- Gold (3)
- Platinum (1)
- Certified (1)



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LEED – Continuing Education

LEED Gold – West City Campus
Skills Center

North City Campus

LEED Silver – Linda Vista Campus
Cesar Chavez Center
ECC Wing Expansion



West City Campus



North City Campus



ECC Skills Center

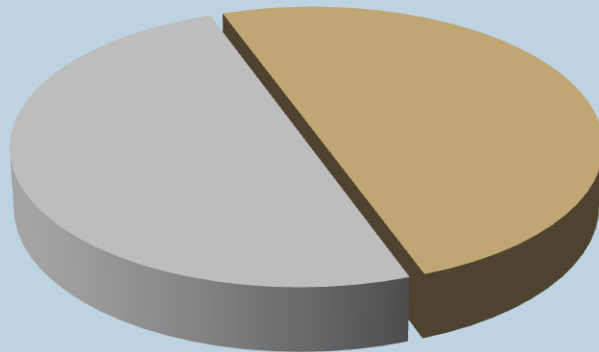
Cesar Chavez Campus



Linda Vista Campus



ECC Wing Expansion



■ Silver (3) ■ Gold (3)



SDCCD 2011 Sustainability Summary

Sustainability Awards

April 2011

San Diego Gas & Electric Energy Showcase 2011

Excellence in Energy Savings Honoree

May 2011

American Public Works Association

Project of the Year: Solar Power Purchase Agreement

July 2011

CCC-IOU Energy Efficiency Partnership Program

Best Practices Sustainability Award: City College Career Technology Center



SDCCD 2011 Sustainability Summary

Sustainability Presentations

City
SAN DIEGO COLLEGE

Career Technology Center (CTC)



Presentation to California Higher Education Sustainability Conference
July 10-13, 2011

“Higher Education Sustainability Conference”
July 2011



San Diego Community College District

Presented to
SDG&E Higher Education Energy Workshop

Thursday, January 31, 2012

David Umstot, PE
Vice Chancellor
Facilities Management



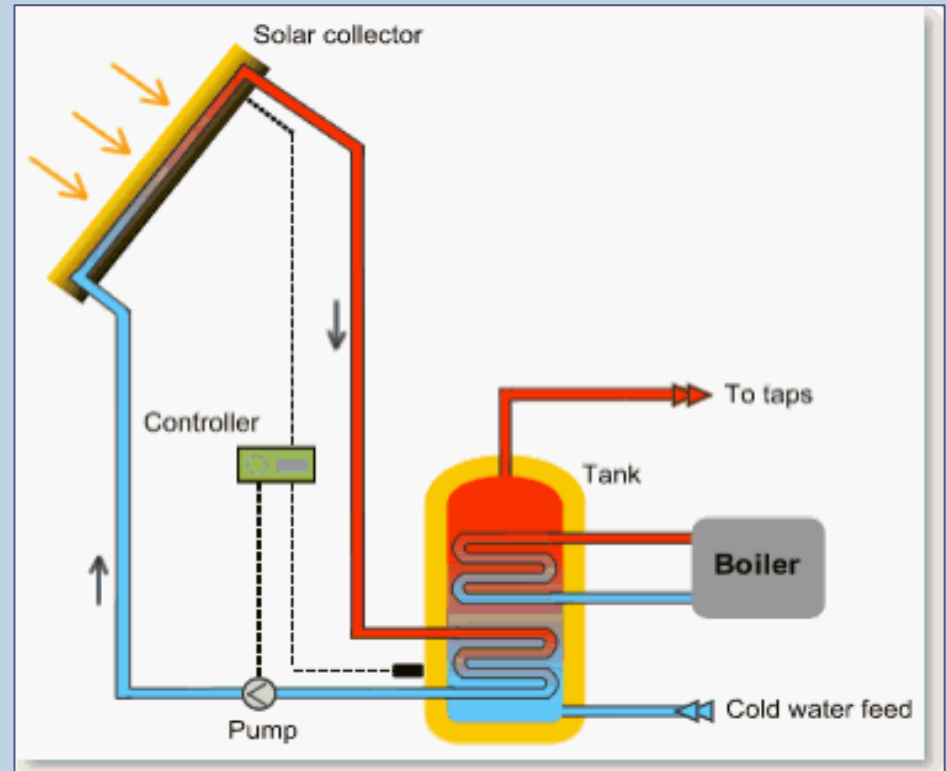
“SDG&E Higher Education Energy Workshop”
January 2012



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New Initiatives in 2011

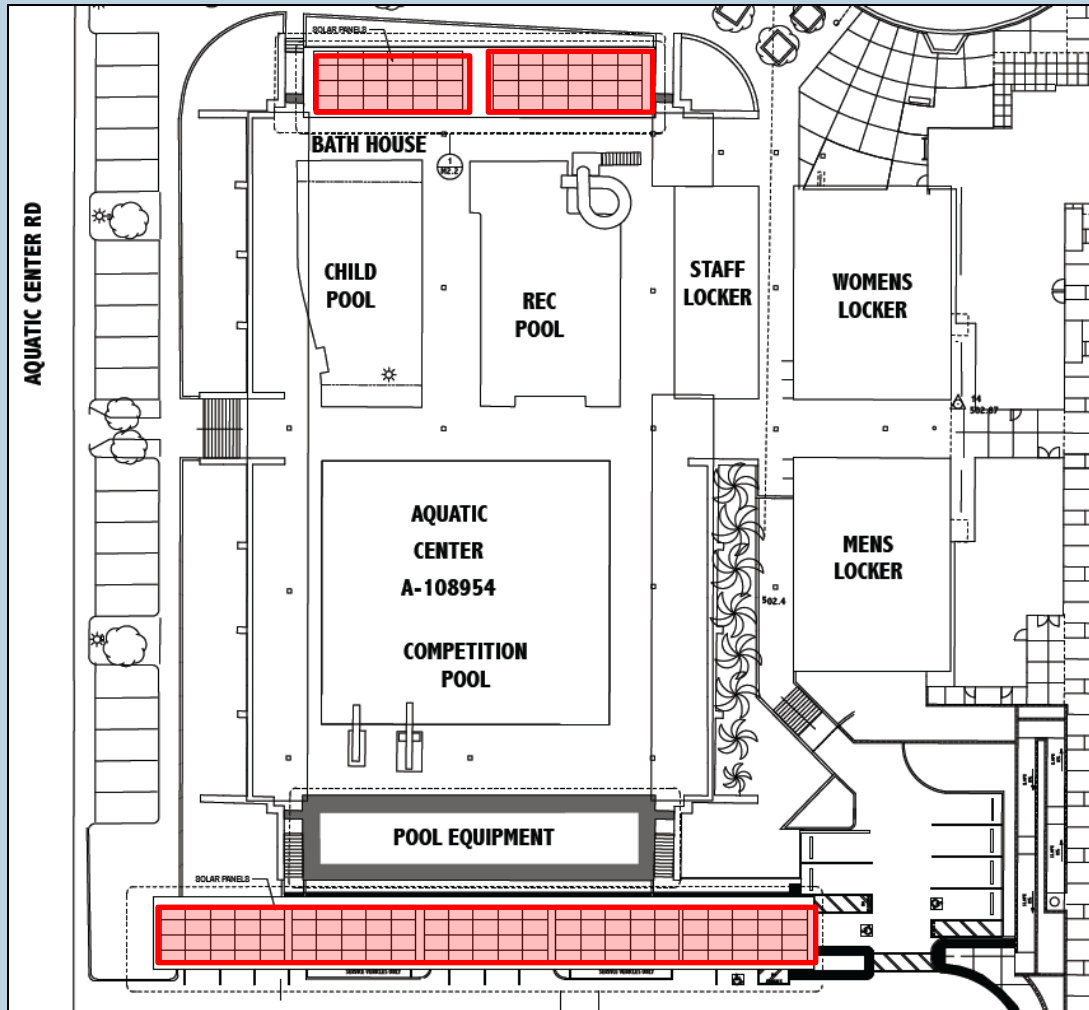
Solar Thermal Heating of Hourglass Aquatic Complex





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Solar Hot Water – Ned Bauer Aquatic Center





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Solar Hot Water - Highlights

System Sizing

- 148 Glazed Flat-Plate Collectors
- Located on Roof of Mechanical Room & on Carport Shading Structures

Energy Savings

- 31,500 Therms Per Year
- \$27,700 Annual Cost Savings

Additional Solar Energy is fed back into campus HHW Loop

Potential for up to \$19,000 in CSI Solar Incentives

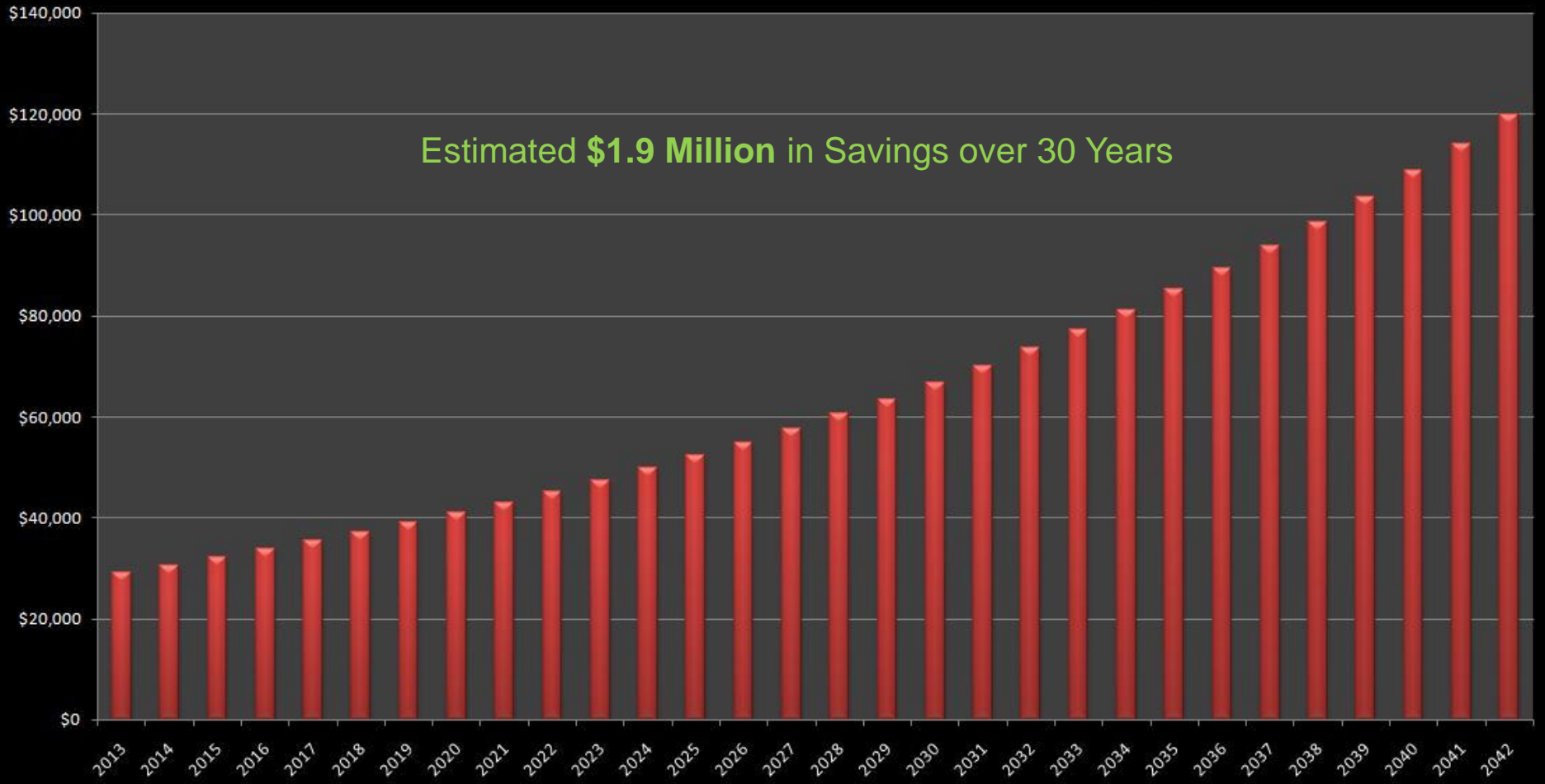




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Solar Hot Water – Lifecycle Cost Savings

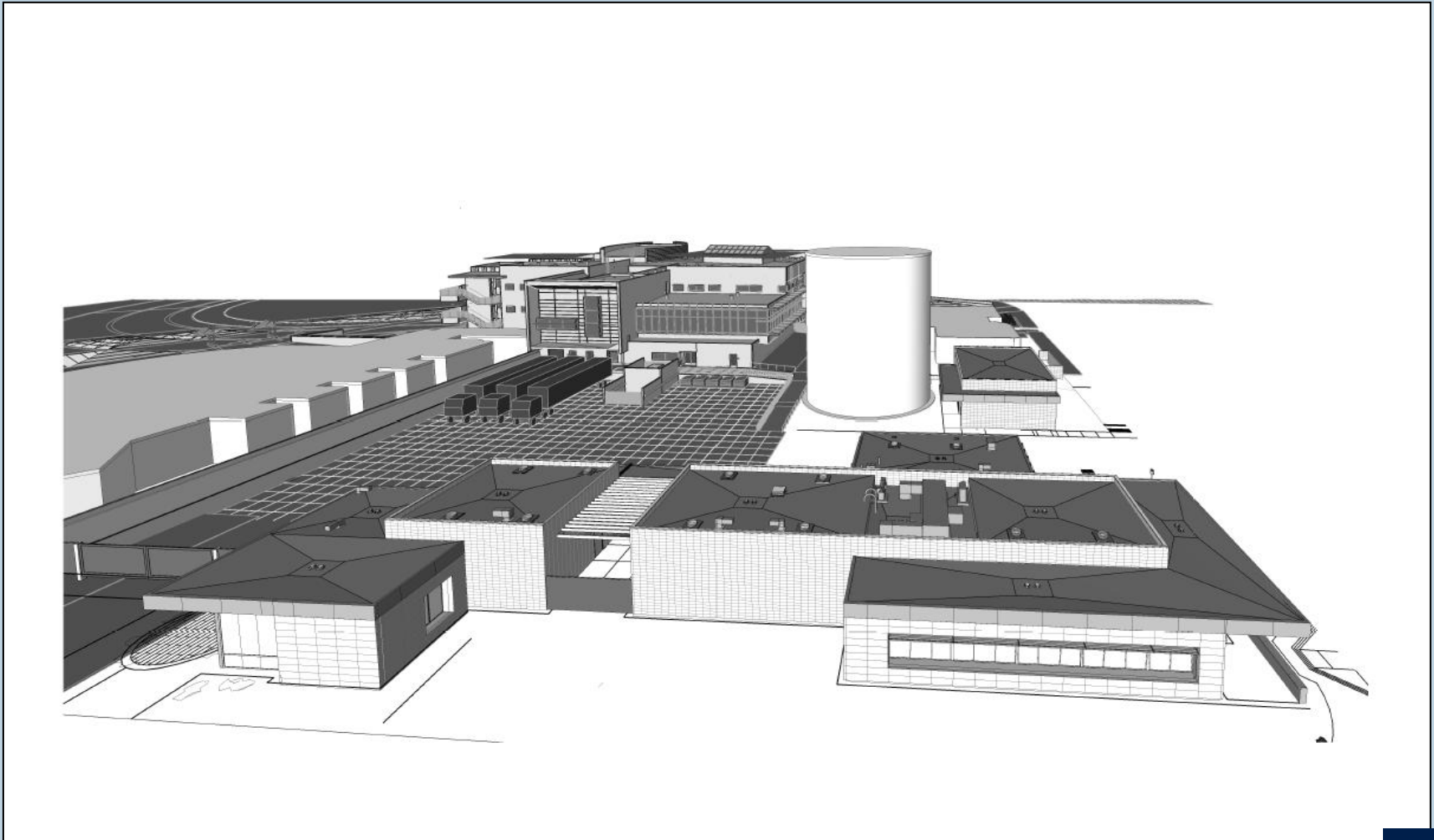
SOLAR THERMAL SYSTEM - 30 Year Lifecycle Cost Savings





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TES Tank – Miramar Central Plant





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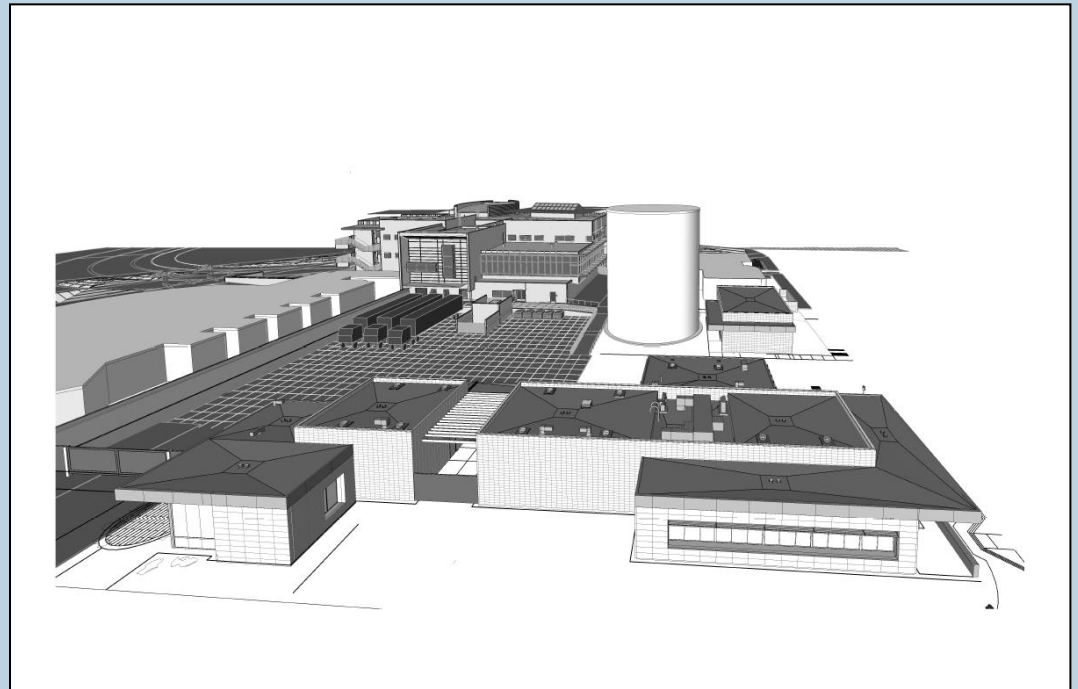
TES Tank – Highlights

Tank Sizing

- 10,000 Ton-hours
- Equal to entire campus at full cooling load for 6 Hours
- 1 million gallon tank

Energy Savings

- 764,404 kWh per Year
- \$190,000 Annual Cost Savings

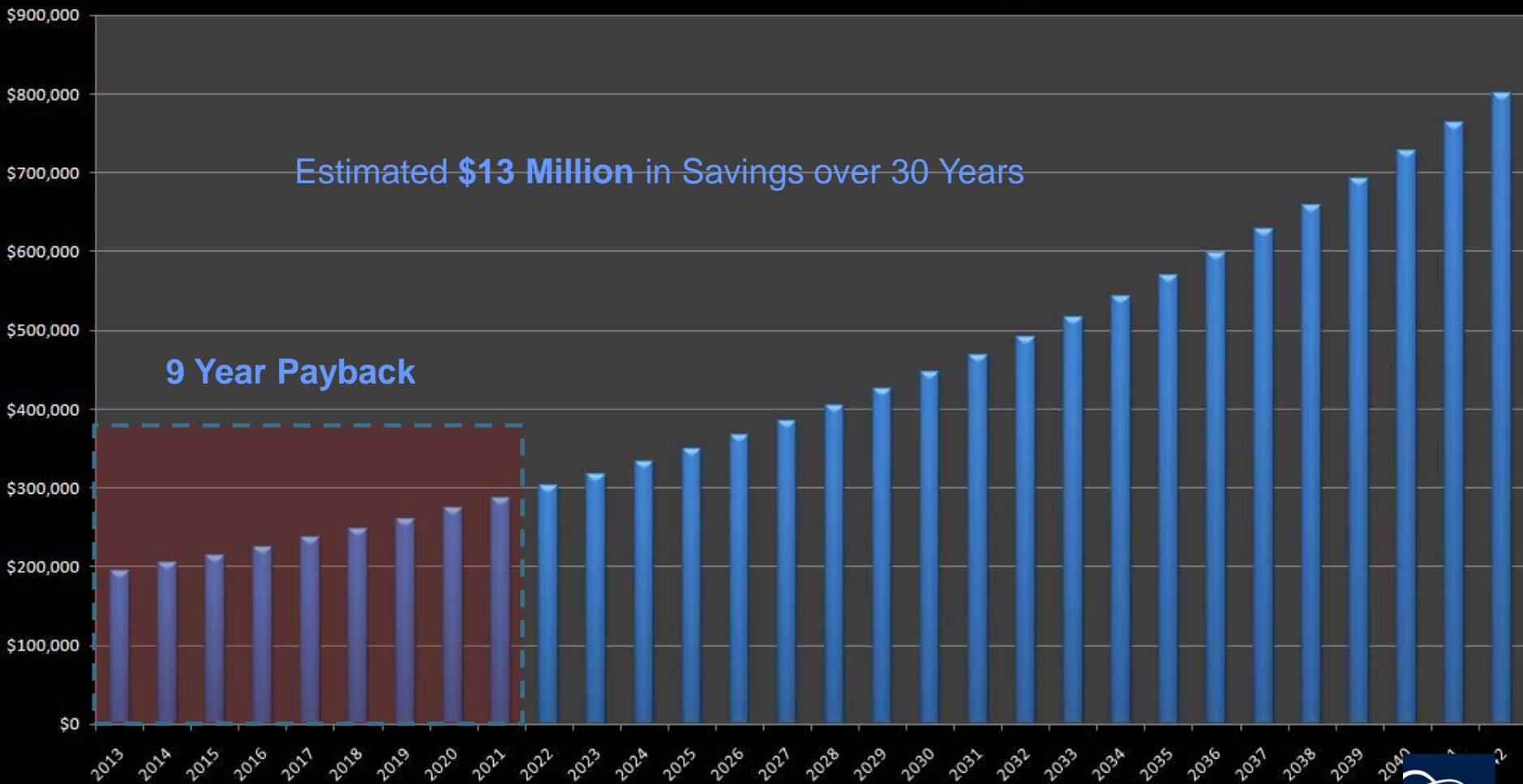




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TES Tank – Payback

TES TANK - 30 Year Lifecycle Cost Savings





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Electric Vehicle Charging Stations





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Hosting Agreement with Ecotality

- Part of EV Project funded by DOE through ARRA
- Low cost/free charging station installation
- Blink Network access
- Charging station operating costs offset by 50/50 revenue sharing
- Ownership transfers to SDCCD in April 2013



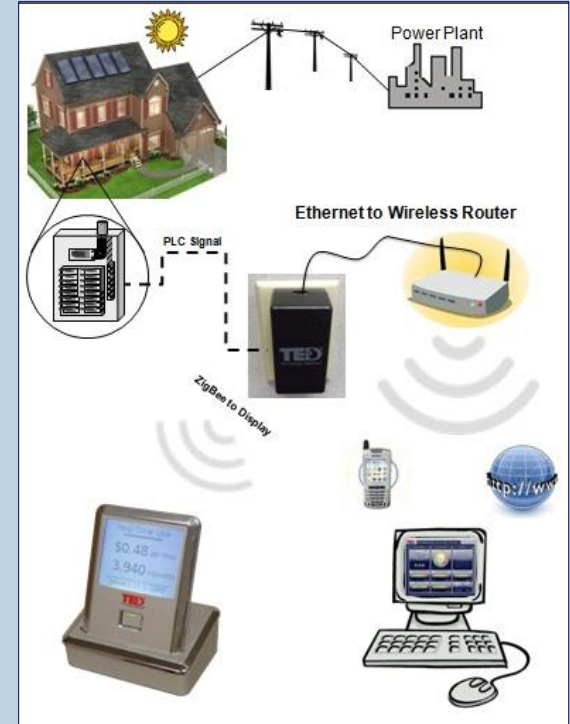
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Additional Utility Strategies

Smart Metering

A smart meter is a digital device that measures electricity usage multiple times per day, providing timely and meaningful information about when and where energy consumption is at its highest.

This can help users better monitor energy usage and implement energy-saving techniques.



smartplanet.com



SDCCD 2011 Sustainability Summary

Sustainability Curriculum at



Sustainability

Certificate & Associate Degree
includes coursework in:
Environmental Biology
Sustainability
Critical Thinking
Environmental Ethics
Ecological Commerce
Globalization
Field experience in sustainability



Sustainable Urban Agriculture

certificates in:

- Urban Farming
- Urban Gardening
- Intro to Ecological Landscaping
- Advanced Ecological Landscaping
- Organic Gardening for the Culinary Arts

Associate Degree





SDCCD 2011 Sustainability Summary

SAN DIEGO *Miramar* COLLEGE



PHYSICAL CAMPUS

- New construction, green campus
- First Platinum LEED Building on a San Diego college campus
- Electric Vehicle Charging Stations
- Development of Vernal Pool area

CURRICULUM

- The Manzanita Project, March 2011
- Interns in the Organic Garden

ENVIRONMENTAL STEWARDSHIP TASKFORCE

- Earth Fair 2011
- Social Media





SAN DIEGO COMMUNITY COLLEGE DISTRICT



Questions?

