

CITY OF EL PASO, TEXAS
AGENDA ITEM
DEPARTMENT HEAD'S SUMMARY FORM

DEPARTMENT: City Development Department – Economic Development

AGENDA DATE: July 30, 2013

CONTACT PERSON/PHONE NUMBER: Marty Howell – 915-383-8217

DISTRICT(S) AFFECTED: ALL Districts

SUBJECT:

APPROVE a resolution / ordinance / lease to do what? **OR AUTHORIZE** the City Manager to do what? **Be descriptive of what we want Council to approve. Include \$ amount if applicable.**

Presentation and discussion by Regional Cyber and Energy Security (RCES) on an annual report on status of project progress activities during the first year of operations, use of grant funds and the performance measures required under the agreement with the City of El Paso.

BACKGROUND / DISCUSSION:

Discussion of the what, why, where, when, and how to enable Council to have reasonably complete description of the contemplated action. This should include attachment of bid tabulation, or ordinance or resolution if appropriate. What are the benefits to the City of this action? What are the citizen concerns?

On February 7, 2012, City Council approved a grant agreement between the City of El Paso and The University of Texas at El Paso, for the purpose of creating and establishing a new technology innovation center that addresses the technical, regulatory, educational and economic development challenges, in Cyber and Energy Security technologies for Alternative Energy Resources and utilities, especially Distributed Solar PV Systems. Per the development agreement, the applicant is required, on an annual basis to provide a presentation to City Council at a regularly scheduled City Council meeting. The Presentation shall detail UTEP's progress on the Project.

PRIOR COUNCIL ACTION:

Has the Council previously considered this item or a closely related one?

No prior actions.

AMOUNT AND SOURCE OF FUNDING:

How will this item be funded? Has the item been budgeted? If so, identify funding source by account numbers and description of account. Does it require a budget transfer?

Impact Fund - \$3,440,000.00 contract period from February 7, 2012 to February 26, 2018.

BOARD / COMMISSION ACTION:

Enter appropriate comments or N/A

N/A

*****REQUIRED AUTHORIZATION*****

DEPARTMENT HEAD: _____

(If Department Head Summary Form is initiated by Purchasing, client department should sign also)
Information copy to appropriate Deputy City Manager



Regional Cyber and Energy Security (RCES) Center 2012 Annual Progress - (Year 1)

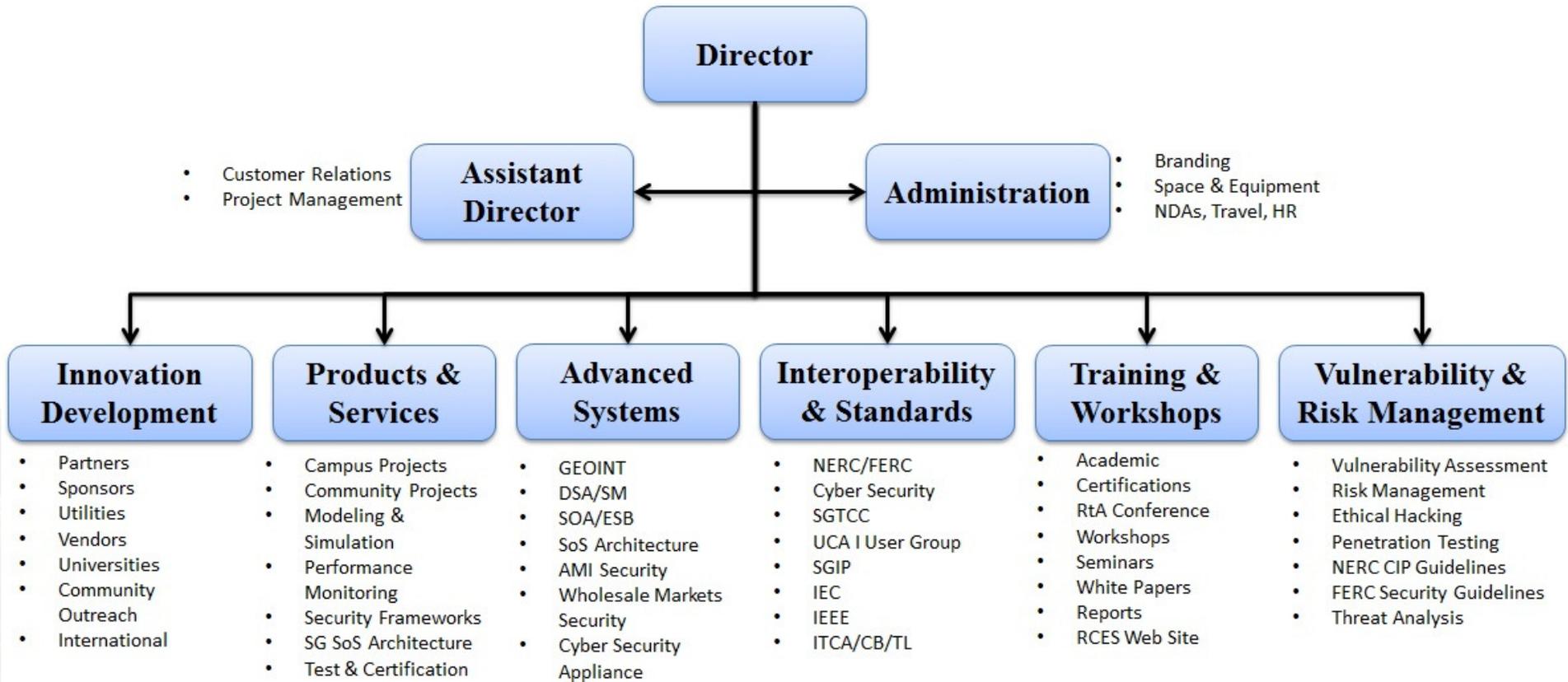
Luis Perez
RCES Acting Director
lgperez@utep.edu

June, 2013



- The **RCES** Center addresses the **technical, regulatory, educational, and economic development challenges in Cyber and Energy Security** technologies for Alternative Energy Resources and utilities, especially Distributed Solar PV Systems.
- Main Scope:
 - Establish the RCES Center as a **world-class authority for the research and development of innovative processes and supporting technology in cyber, cyber-physical, and energy security**, as well as in modeling and simulation of secure energy networks.
 - Develop **partnerships with industry, government, and academia** which create opportunities for the deployment and broad-scale commercialization of those processes and technologies
 - Deliver **economic benefits to include including job creation, IP licensing**, and industry growth across the Paso del Norte region and worldwide.
 - **Create curriculum and provide instruction** to create an increased awareness of cyber, cyber-physical, and energy security throughout the utility, vendor, government, regulatory, academic, and media sectors

- The RCES center is organized into 7 technology and services areas. The areas represent the major technology and services projects being developed by the RCES Center. Each of the 7 areas is managed by a RCES Center branch manager that oversees all activities of development and community outreach in the area.



RCES Center Organization and Major Areas

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- Branch promotes **partnerships, sponsorships, and collaboration** with local and regional cyber and energy companies and stakeholders.
- Goal is to **promote RCES** and **generate revenue** for jobs in the Center from utility and industry companies in cyber and energy security.

Presented in 26 paragraphs in the Annual Report

Major Partnerships and Non-Disclosure Agreements (NDA):



Collaboration on cyber and energy security technology and solutions for distributed solar PV systems:



- Branch offers **products** and **services** produced by the RCES Center.
- Goal is to **be revenue producers** for the Center and thus build new jobs.

Presented in 12 paragraphs in the Annual Report

- UTEP campus is “Living Energy Systems Laboratory”
- PV solar farms in campus locations and integrate into campus grid
 - 184 kW Solar PV System, \$1M, State Energy Conservation Office (SECO CM1060), complete 23 December 2011
- Electric Vehicle & Charging Station Infrastructure
 - 20 Electric Vehicle Charging Stations on campus (SECO CM1238)
- UTEP Flat Rooftop Solar PV Program
 - Potential for 5.5 MW solar PV system deployment
- Measure, monitor, model, and predict energy consumption on campus using NREL’s Homer tool
 - Cost Benefit Analytics (CBA) to predict performance of renewable and storage energy systems
- [UTEP Energy Dashboard](#)
- EmPower the Miner M” Contest





SunPower Solar PV Panels (108 kW) on Roof of Swim & Fitness Center and 78 kW on Facilities Canopy





Approximately
50 Evs
In El Paso Region
In 2012

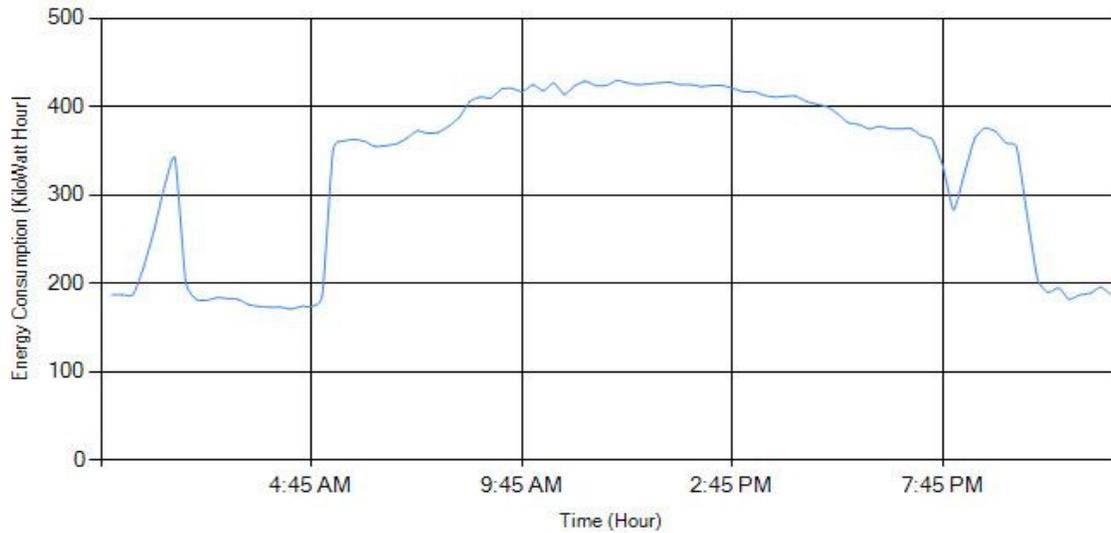
Electricity at 7 cents/kWh



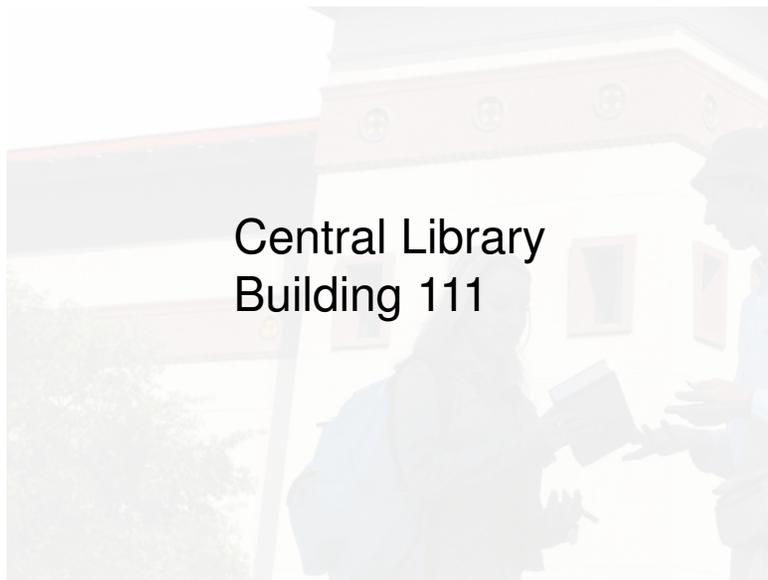
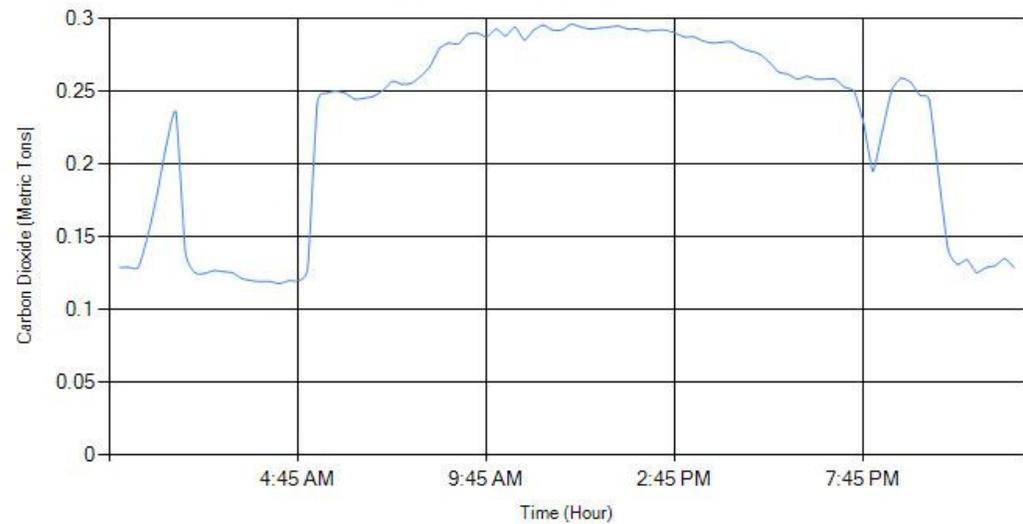
Energy Dashboard Provides Campus Awareness



Energy Consumption



Carbon Dioxide



- Branch **develops proposals** to external funding agencies and **generate revenue** and jobs for the RCES Center.
- Goal is to **incubate RCES research into companies** for El Paso and **develop new products and services**.

Presented in 20 paragraphs in the Annual Report



- Mike Loya Innovation Fund
 - “Dynamic Spectrum Access (DSA) Sensors for Spectrum Awareness”
- White Paper to the Nation Geospatial- Intelligence Agency (NGA)
 - “Integrated Geospatial and Temporal Threat Assessment of Smart Grid Utility Systems”
- United States Agency for International Development (USAID)
- National Science Foundation (NSF)
 - “Near Real-Time Risk Analysis of Power Grid Infrastructure”
 - Development of solutions for dynamic spectrum access(DSA) & radio communications reliability
- RAMFES Project
- Solar Integrator Program

- Branch **participates** and **influence standards and interoperability** in electrical power grids at the national level.
- Goal is to **enable awareness** and **expertise** in national Smart Grid Interoperability Panels working groups and standards review activities.

Presented in 14 paragraphs in the Annual Report

- The RCES Center staff belongs to several standards and interoperability workings at the national level:
 - **Smart Grid Architecture Committee (SGAC)**
 - **Smart Grid Testing and Certification Committee (SGTCC)**
 - **Cyber Security Working Group (CSWG)**
 - **Domain Expert Working Groups (DEWGs)**
 - Transmission and Distribution
 - Building to Grid
 - Industry to Grid
 - Home to Grid
 - Business and Policy
 - Vehicle to Grid
 - Distributed Renewables, Generation, and Storage



- Branch provides the **training and education** function to the El Paso region in cyber and energy security.
- Goal is to provide a **source of revenue** for the RCES Center.

Presented in 18 paragraphs in the Annual Report.

Workshops and Seminars:

- IPv6 Network Protocol - April 19, 2012
- Wireless Communications and Smart Grid Security- May 25, 2012
- RCES Smart Grid Cyber Security- June 14-15, 2012
- RCES Workshop on Renewable Energy & Cyber Security at EPPC- October 5, 2012



Training and Conferences:

- ETAP Training- May 14-18, 2012
- DEFCON- July 26-29, 2012
- Re-Energize the Americas(RtA)- October 16-17, 2012
- Military Microgrids at the Grid-Week Symposium and Conference- October 2-4, 2012
- Cyber Security for Industrial Controls Conference- October 21-26, 2012



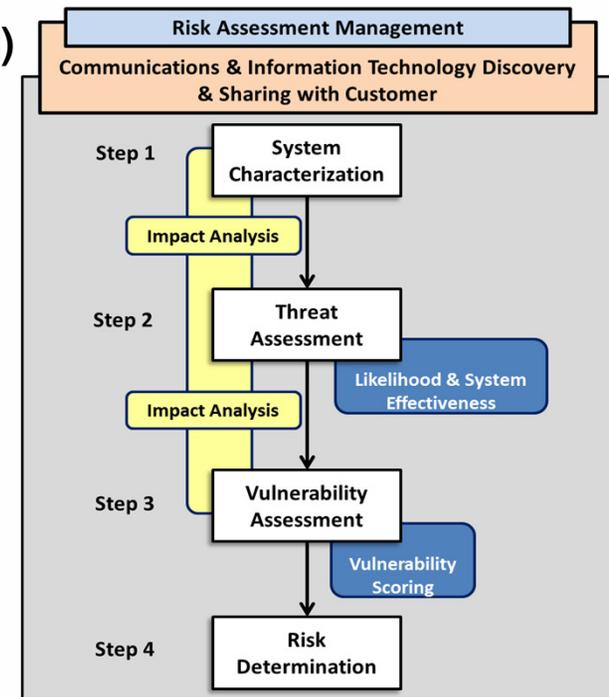
*****DONATION*** to the ECE department at UTEP for the amount of \$450,000 from Operational Technologies, Inc. Donation received was a power modeling tool set called Power Lab.**

- Branch is to develop **Vulnerability Assessment and Risk Management processes** that can be used with utility and community customers to determine threats and vulnerability points in their enterprise.

Presented in 12 paragraphs in the Annual Report.

Vulnerability Assessment and Risk Management (VARM)

- Designed for utility power & IT infrastructures.
- Process focuses on **Cyber and Physical Threats** to a vulnerable point in the utility infrastructure.
 - Informational Technology (IT)
 - Operational Technology (OT)
- Provisional Patent filed in November 2012



The RCES VARM 1.0 processes are basis for Provisional Patent.

RCES Benefits/ Metrics (12)	Year 1 2012	Year 2 2013	Year 3 2014	Year 4 2015	Year 5 2016	Year 6 2017	TOTAL
1. Jobs Created	14/12	10	10	16	17	18	85
2. Average Dollar Compensation/ Job	84,000/ 73,400	86,000	89,000	92,000	95,000	97,000	406,373
3. UTEP Graduates & Trainees in Power Cyber Security	5/5	15	20	25	40	50	155
4. Industrial and government units that Become Sponsor & Partners	10/16	10	10	10	10	10	60
5. Cyber & Energy Security Training Courses & Workshops	4/4	4	4	8	8	8	28
6. Cyber & Energy Security Courses at UTEP & NMSU	2/2	4	6	8	8	8	36

RCES Benefits/ Metrics (12)	Year 1 2012	Year 2 2013	Year 3 2014	Year 4 2015	Year 5 2016	Year 6 2017	TOTAL
7. Start-Up Cyber Security Companies in Region	0	1	1	1	1	1	5
8. Power Grid Products & Services Tested & Certified by RCES	5/1	5	10	10	10	10	50
9. Solar PV & T&E Industry Funded Projects at the RCES	5/2	10	20	20	20	20	95
10. External Funding Grants & Contracts	4/2	8	10	10	10	10	52
11. Attendees to the Annual RCES Conference	50/225	80	100	200	200	200	830
12. Presentations at National Cyber Security for Power Grid Conferences	5/2	10	15	20	20	20	90

- Continue work on the **VARM study on the UTEP campus** and update the VARM processes based on lessons learned.
- **Work with IBM, Cisco, and DNSC** to improve the VARM processes using their application tools.
- Start the **modeling efforts for the WSMR contract** using data provided by the military Department of Public Works (DPW).
- Solicit the **Industrial Control Systems Conference** to El Paso for the 2013 year. The conference is looking for a new venue and location in the center of the country.
- Write **two proposals to DOE** for cyber and energy security technology projects.
- **Investigate strategic planning and business plan** for the VARM processes to spin-off a company.
- Bring a **solar energy** option to the residents of El Paso.



Regional Cyber and Energy Security Center (RCES)

To establish a center that addresses the technical, regulatory, educational, and economic development challenges in Cyber and Energy Security technologies for Alternative Energy Resources and utilities specially distributed Solar PV Systems. The project will stimulate and enhance business and commercial activity for El Paso and South Central New Mexico. The project is anticipated to generate revenue for jobs in the center in the cyber and energy security. Annually RCES shall present to City council on a regular scheduled meeting a presentation detailing progress on the project.





Regional Cyber and Energy Security Center (RCES) FY 2012 -2013

- The impact fund is derived from the El Paso's Electric Franchise fee and the purpose of it is to help
 - Create and attract new quality jobs
 - Attract and retain alternative energy companies
 - Develop a sustainable Alternative/Renewable Energy Cluster in El Paso
 - Expand and diversify tax base
- The Development Program Agreement between the City of El Paso and RCES, was approved on February 7, 2012 and drives from the Impact Fund.



Regional Cyber and Energy Security Center (RCES) FY 2012 -2013

Agreement Points:

- Up to \$3,440,000.00 Grant from the impact fund
- A total of 3 payments have been processed totaling \$ 540,008.99 for first year of operations.
- Twelve performance metrics & benefit indicators
 - Seven performance indicators were met to satisfaction for year one, and applicant is in compliance of agreement.
- Grantee must score favorable in at least 50% of the 12 performance indicators
- Grantee should meet at least 75% of each favorable performance indicator
- If Applicant fails to meet the “Favorable” scoring threshold for two funding years, it shall constitute an event of default.
- Development program is in effect for 6 consecutive years
- Applicant must present a yearly progress report to council



Questions