ACCELERATE COLORADO

D.C. 2010

Energy Background

Aurora Campus for Renewable Energy and SolarTAC Background

- In late 2009, nearly $1.8 million of infrastructure work was completed at the Solar Technology Acceleration Center (SolarTAC) in Aurora, the first shared solar technology center of its kind in North America. The site occupies 74-acres adjacent to the 1,762-acre Aurora Campus for Renewable Energy (ACRE). To move this project forward, basic infrastructure is needed at the site. The City of Aurora has already invested more than $13 million into the campus and needs approximately $10 million for basic infrastrucutre needs.
    - The City of Aurora has requested $2 million for water wells at the Aurora Campus for Renewable Energy. This $2 million could provide sufficient water service for the first few planning areas in the "heart" of the campus. Investment in these wells would serve the initial development of each planning area with the user being responsible for providing the fire protection tank/pump system and septic system required for their specific project.
- This unique campus is the first in the region designed specifically for the advancement of alternative, renewable energy research, development, and production and is uniquely situated to take advantage of the exceptional resources available in the area.
    - It boasts 300+ sunny days a year and is home to NREL, and The Colorado Renewable Energy Collaboratory, a research partnership between NREL and Colorado's premier research universities – Colorado State University, University of Colorado and Colorado School of Mines.
    - By fostering partnerships across public and private sectors, the city plans to develop the campus as a world class leader in innovative sustainable design, technology and operation.
- The SolarTAC mission is to increase the efficiency of solar energy products and rapidly deploy them to the commercial market. Xcel Energy, SunEdison, and Abengoa Solar are the founding members. NREL and the Electric Power Research Institute (EPRI) recently announced that they have both signed letters of intent to join SolarTAC.
- The Aurora Campus for Renewable Energy and SolarTAC represents collaboration between The City of Aurora, NREL, Xcel Energy, Abengoa Solar, SunEdison, The Colorado Renewable Energy Collaboratory and Midwest Research Institute (NREL's management and operating agency).

National Renewable Energy Laboratory Background

- The Department of Energy's National Renewable Energy Laboratory (NREL) in Golden, Colorado is the nation's premier research facility for new clean energy systems. One of NREL's priorities is to accelerate market-relevant science and technology innovation for new

clean energy systems; another is to rapidly move those discoveries into commercialization at a speed and scale required to meet national needs.

- To ensure that the National Laboratory has the facilities it needs for new research roles and a growing workforce, NREL has committed to designing and building "The Campus of the Future." Plans call for a unique, sustainable, mission-focused, and flexible campus that fully supports the ambitious research agenda of the lab.
    - NREL's current sites—the South Table Mountain Site in Golden, and the National Wind Technology Center near Boulder, are the national focal points for renewable energy and energy efficiency technology development.
    - With current and planned new facilities, NREL is providing visible leadership by example, using the cutting-edge energy efficiency and renewable technologies it has developed to showcase within its own operations.
- NREL has a $2 billion dollar build-out program planned over many years to design and construct new laboratory facilities to conduct necessary research on all types of renewable fuels. Accelerating more of this funding profile to FY 2010 and FY 2011 would add jobs and help end dependence on foreign sources of oil sooner.
    - Colorado companies are involved in the design and construction of these facilities.
    - If facilities are constructed sooner, research can be accelerated in wind, solar, fuel cells and bio-fuels to help meet our energy independence goals.
- Renewable energy is a burgeoning industry within the state of Colorado. The world faces a finite supply of fossil fuels and in response to a dramatic shift in federal policies, programs and budget priorities, Colorado is emerging as a leader in many areas of renewable energy including solar, wind, bio-fuels, hydropower, geothermal, and biomass technologies.
- Colorado ranks fourth in the nation for its 2009 concentration of renewable energy and energy research employment (18,230). The 2008 average salary for a renewable energy and energy research worker was $74,920 ($68,170 nationwide).
- Colorado has 18,230 renewable energy and energy research workers in nearly 1,530 companies. In fact, renewable energy employment grew 3.7 percent in the state from 2008 to 2009; the national growth for the same period was -0.2 percent.

Solar Energy Background

- With more than 300 days of sunshine per year, Colorado is ideal for solar energy systems. Estimates from NREL suggest that 5.5 GW of solar energy capacity can be developed in southern Colorado – this would satisfy about half of the state's peak power demand.
- Abound Solar, a growing solar module manufacturer with more than 250 employees along the Front Range, opened a new thin-film manufacturing facility in Longmont capable of producing three million solar panels annually. The company was a creation of technology transfer stemming from Colorado State University Professor W.S. Sampath.
- Buckley Air Force Base will become the first site in the Air Force Space Command to install a major solar project. The base's $7.3 million project includes more than 5,000 panels. Construction should be completed by May 2010.

Wind Energy Background

- The U.S. Department of Energy states that wind energy is the fastest growing type of energy generation in the United States and around the world. This growth can be attributed to a

greatly reduced cost of production, customer demand for clean, diverse sources of electricity, and state and federal incentives to stimulate the market.

- Colorado is quickly becoming the major North American center for wind energy research and manufacturing. Denmark-based Vestas Wind Systems is expanding its U.S. presence with three new manufacturing facilities in Brighton and Pueblo. Two plants in Brighton will assemble blades and nacelles and workers at the Pueblo facility will manufacture wind turbine towers. Denmark-based Bach Composite Industry located its first North American manufacturing facility in Fort Lupton. The company produces composite materials for wind-turbine customers and is expected to be in full production in 2010.
- Colorado ranked ninth in the nation for total installed wind power capacity as of the end of December 2009. (American Wind Energy Association, 2010)