



**ENERGY
HUNTSVILLE**



WHAT IS ENERGY HUNTSVILLE?

Even before Mayor Tommy Battle was elected to office, he had a vision on how leveraging the City's relationship with Redstone Arsenal could create new programs, workforce diversification, and economic development for Huntsville and surrounding communities. Once elected, Mayor Battle solicited volunteers from large and small businesses and other organizations to carry out and share his vision.

Working with Redstone Arsenal leadership, the Chamber of Commerce quickly emerged as a strong ally of the Mayor's vision, as well as other organizations. Leaders of volunteers like Harry Atkins and Dale Jobes organized large numbers of volunteers to develop a strategic plan and carry-out its execution.

The Mayor's energy team (first labeled North Alabama Energy Initiative) quickly recognized that the recent economic downturn, though related to many issues had a strong connection to rising energy costs and our economic dependence upon foreign fuels. Decisively, the energy team known as Energy Huntsville began to develop the energy business base to allow for education and training, project development to reinforce energy independence, and the marketing strategy to support economic development in the Huntsville community.

The recent tragedy of the storms that brought such destruction to Huntsville area on April 27, 2011 states yet another purpose for Energy Huntsville: Resilience. A new goal for Energy Huntsville is

to provide for the area's energy security. Energy Huntsville is working with the Mayor's office to collect data on the impact of the storms to Huntsville energy infrastructure and develop disaster and contingency planning to mitigate those impacts in future storms.

Energy Huntsville is working to ensure that our citizens will have and enjoy low-cost energy to heat and cool their homes and businesses, turn on the lights to generate new business, and have the fuel so folks can get back and forth to work; without having to depend on any foreign country or neighboring state to supply the energy to Alabama. Energy Huntsville will exploit the technology in our area to develop independent sources of energy and fuel.

WHAT IS ENERGY HUNTSVILLE'S MISSION?

Energy Huntsville will link the systems engineering, test, and technology strengths of the Northern Alabama region with key customer requirements and national policy directives for advanced energy systems and applications. Our goal will be to establish this community as the go-to technology center for solutions oriented energy programs and projects. We will promote recognition for the region as a key technology cluster for energy system, technologies and applications. We will diversify the region's R&T portfolio, workforce and economy to include energy applications and innovations.

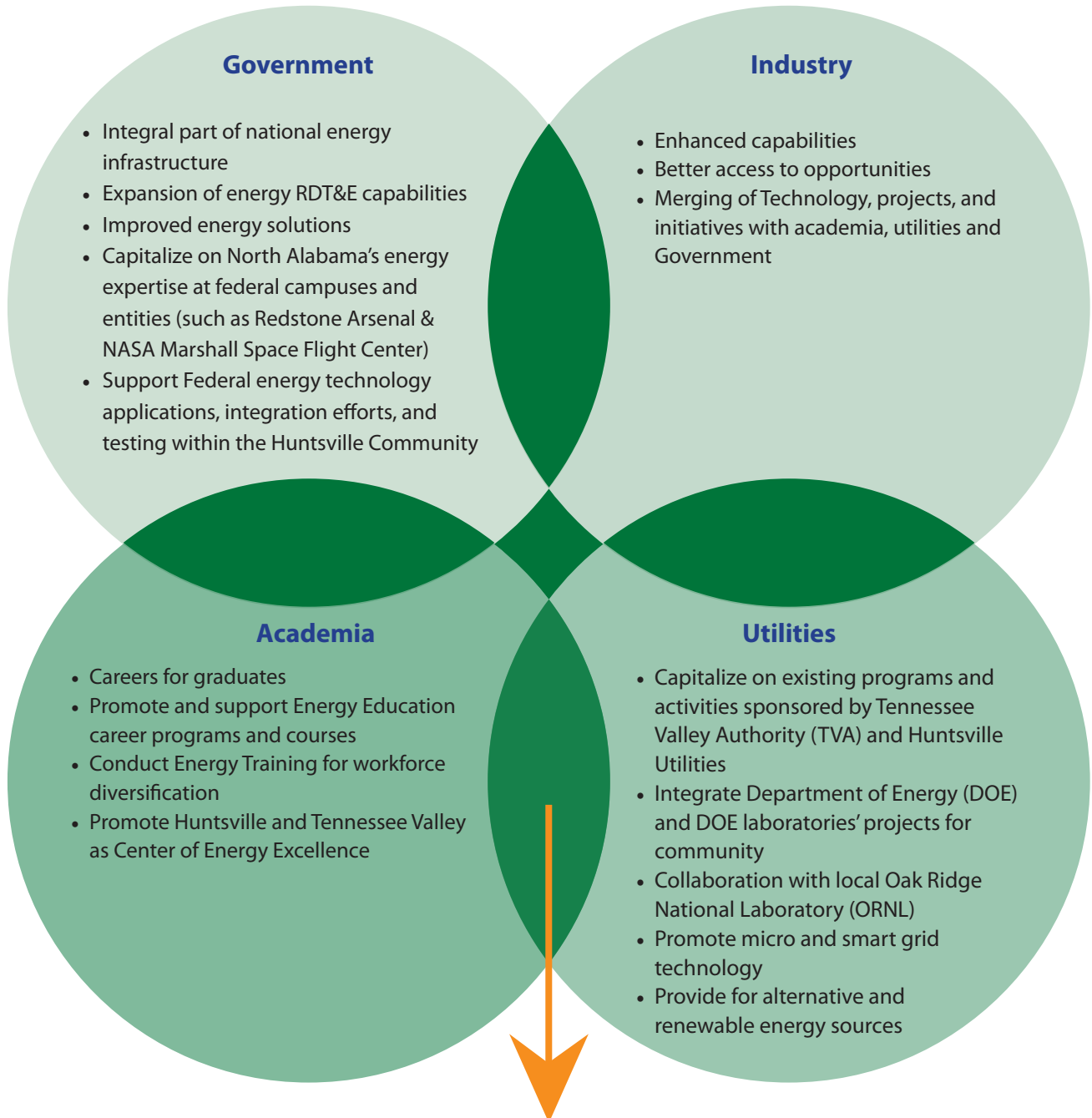


OBJECTIVES

- Capitalize on North Alabama’s technical depth and expertise in systems engineering, testing, technology integration, and technology innovation to diversify our economy, create new job opportunities, enhance our national reputation in emerging energy markets.
- Expand the reputation of Northern Alabama as a key technology cluster, key innovator, key national asset
- Capitalize on the region’s reputation for innovative technical solutions aligned with customer needs
- Enhance the Region’s recognition for clean and green – key attraction for firms and workforce – key economic advantage for siting the industries of tomorrow
- Expand our technology base to meet the needs of emerging markets and new state industries – everything from clean energy systems for autos to technologies that enable the military to have more fight with less fuel supply logistics
- Establish Redstone as a key beta test system of systems, technologies and new product facilities – such as a small modular reactor
- Identify, Promote and Support sustainable energy, policy, and engineering and science career programs and courses
- Support businesses, non-profits, and academia in their commercial and federal energy technology applications, integration efforts, and testing
- Increase community and industry awareness about energy conservation and renewable energy
- Capitalize on existing programs and activities sponsored by TVA and HSV Utilities – make the region the star of the Tennessee corridor



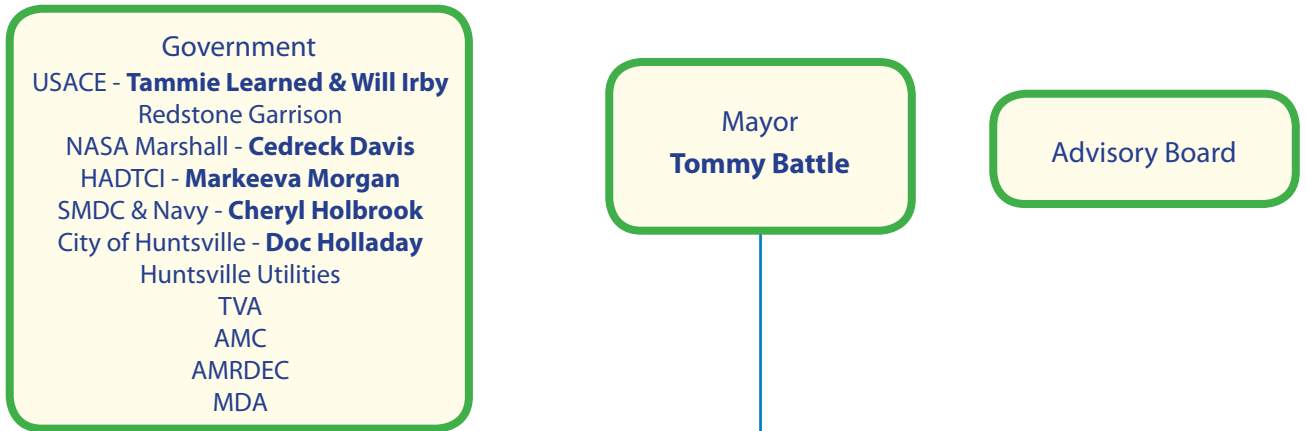
COLLABORATIVE STRUCTURE AND BENEFITS



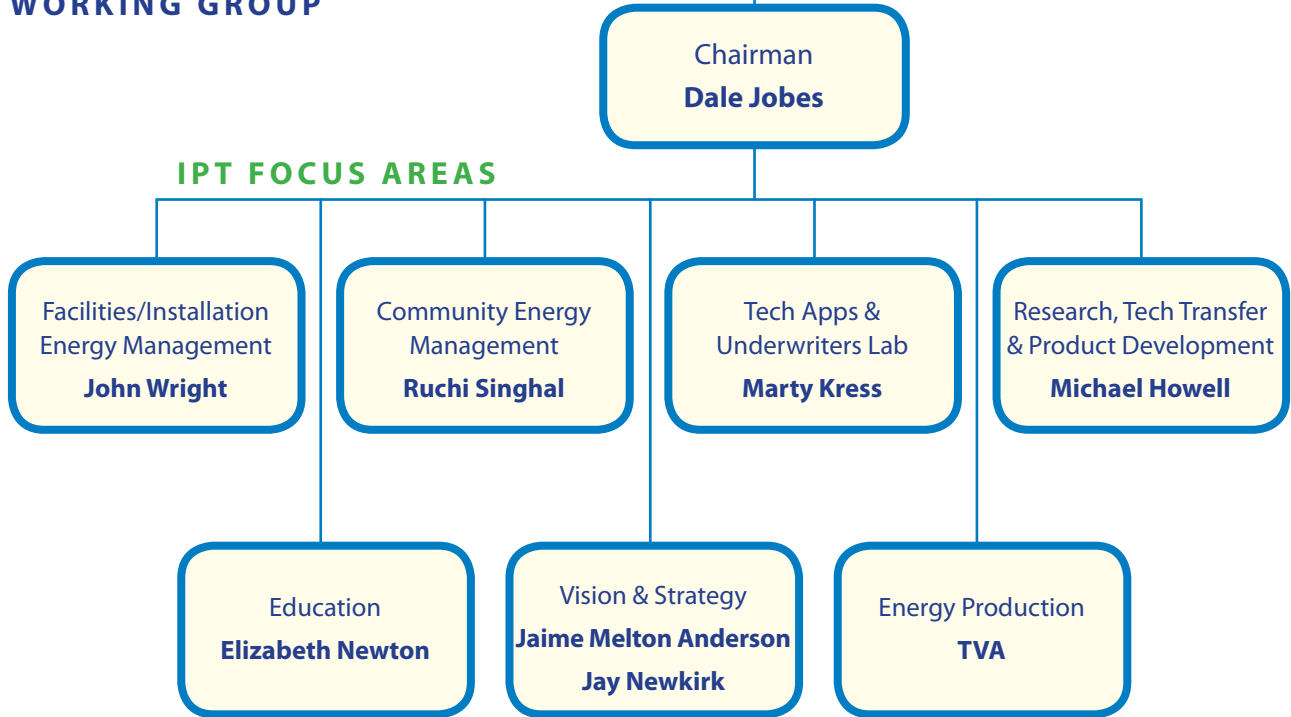
Value to the Community

- Creation of local jobs
- Influx of energy talent
- Diversification of community capabilities
- Enhancement of workforce
- Enhanced competitive position
- Increased energy conservation and energy awareness
- Resilience of Energy infrastructure
- Energy independence from foreign and neighboring sources
- Collaboration

HOW IS ENERGY HUNTSVILLE ORGANIZED?



WORKING GROUP



KEY SUPPORT FUNCTIONS



IPT FOCUS AREA: FACILITIES/INSTALLATIONS ENERGY MANAGEMENT

Mission

In support of the OIPT's purpose/mission the Facilities/Installation Energy Management IPT will identify projects and initiatives appropriate for installation/campus-wide/ large facility implementation in collaboration with federal installations/university campuses/utility providers to enhance North Alabama's position in Sustainable and Renewable Resources.

Objectives

- Support "OIPT" objectives
- Review current installation/campus/facility energy portfolio
- Identify, Promote and Support Energy Portfolio projects which enhances/advances the mission capability of the various organizations
- Identify traditional and non-traditional sources of funding for energy portfolio projects
- Support and Collaborate with:
 - USAG Redstone
 - NASA MSFC
 - UAHuntsville
 - AAMU
 - UNA
 - TVA
 - Municipal Utilities
 - Large non-profit or commercial business campuses e.g. Huntsville Hospital System
- Project Goals:
 - Meet/exceed standards/goals
 - Enduring payback
 - Enhances mission capability
 - Enhances quality of life for the residents and workforce as well as the adjacent communities

IPT FOCUS AREA: EDUCATION

Mission

The Education IPT will coordinate ways in which academia can uniquely contribute to the region's energy activities. Specific thrusts are anticipated to involve student internships, innovative fundamental research, policy analyses, business case analyses and market assessments for energy entrepreneurs, and coursework/training for the future energy workforce. Membership is anticipated to include Tennessee Valley 2- and 4-year colleges and universities and informal education organizations such as US Space & Rocket Center and SciQuest.

Upcoming Projects

- Work with the Facilities/Installation IPT to fulfill the requirement of additional resources for Redstone's Energy Manager and DPW
- 2nd Annual Tennessee Valley TEAMS Competition - Junior Engineering Technical Society (JETS) TEAMS program with a Clean Energy focus this year – high school competition challenging students to work collaboratively and apply their math and science knowledge. Sponsored: Air, Space and Missile Defense Association (ASMDA). Hosted: Calhoun Community College/Robotics Technology Park
 - Provide a speaker to discuss the following - LEED certification, energy savings, water efficiency, stewardship of resources, and sensitivity to their impact



IPT FOCUS AREA: COMMUNITY ENERGY MANAGEMENT

Mission

To utilize local and regional capabilities in order to develop energy efficient and renewable energy projects for the North Alabama area. Projects for the community may encompass some aspects of advanced energy technologies while also growing the “green” job market. This IPT will also support community programs that create a culture of energy awareness.

Current Projects:

1. Huntsville Utility - Energy Survey Program

- a. Partners: HU, Nexus, Home Builders Association of Huntsville/Madison Co
- b. Funding: DOE Better Buildings Program and SEEA
- c. Timeline: June 2010 – June 2012 (and more if renewed)

2. Drake State Technical College – Green Skills Training Program

- a. Partners: Drake, Nexus, Southern Solar, Still Serving Veterans, and Green Jobs Alliance of AL
- b. Funding: DOL SESP grant through ADECA
- c. Timeline: 2011 – 2013

3. AL, VA, WA, MA State Energy Program – Residential Energy Efficiency ramp-up

- a. Partners: ADECA, Nexus, SEEA
- b. Funding: DOE State Energy Programs (SEP)
- c. Timeline: 2011 – 2014

4. Future Projects

- 1) Wastewater Sludge to Energy – Wright Tech “BioDryer”
 - a. Partners: GreenRite, Nexus, City of Huntsville
 - b. Funding: Tipping fee contract with GreenRite
 - c. Timeline: Once installed, continuous production
- 2) Solar Array Farm, South Huntsville – Harvesting the Sun
 - a. Partners: Rocket City Solar, Nexus, Drake
 - b. Funding: DOE SunShot, DoD, USDA (if on agriculture property)
 - c. Timeline: Development 2011, launch 2012
- 3) Green Campus – Alliance to Save Energy
 - a. Partners: Alliance to Save Energy, UAHuntsville, Drake (possibly)
 - b. Funding: TVA, ASE
 - c. Timeline: End of 2011

IPT FOCUS AREA: TECH APPS AND UNDERWRITERS LAB

About this IPT

- The Technical Applications/Underwriters Lab IPT will focus on using the regional systems engineering and test capabilities to create new initiatives directly linked to DOD requirements.
- The Technical Applications portion of the IPT will focus on integration emerging energy systems, subsystems and technologies into DOD platforms and systems. Be that fuel cell based proposed for UAVs or vehicles, advanced battery systems in a broad array of field assets, or new energy efficient generators. Focus will be determined by customer requirements in collaboration with AMRDEC and other key DOD organizations.
- The Underwriters Lab is intended to give DOD customers at Redstone a technical/cost/performance measure to evaluate/rank one energy system or product over another. Modeled on the SAVER Program created for First Responders by Texas A&M and Consumer's Report, the Lab will have the ability to test and validate new commercial systems, as well as system emerging from US national labs.
- The Lab is intended to be a stand alone complex in the future. At the outset the team will focus on candidate technologies and establishment of a technology validation process that is acceptable to key DOD procurement organizations, such as the Army Materials Command.

Initial Suite of Firms and Organizations

- This set of activities is being vetted with key Redstone organizations. Due to schedule conflicts, the initial meeting with the leadership of AMRDEC, a key implementing organization along with local HSV firms, has been delayed
- Concept has been vetted with several local firms and several key primes. IPT is still in the formative stages
- Discussions have also been initiated with DOE concerning this model and its potential to enable ARPA-E systems and technologies to be evaluated for DOD usage. Initial testing and validation by DOD could facilitate entry to the marketplace

IPT FOCUS AREA: ENERGY PRODUCTION

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COMPANIES AND ORGANIZATIONS SUPPORTING ENERGY HUNTSVILLE

The logo for CALIBRE, featuring the word "CALIBRE" in a bold, blue, sans-serif font.

www.calibresys.com

CALIBRE is an employee-owned management and technology services company based in Alexandria, Virginia. Founded in 1989, CALIBRE has evolved into the preferred, trusted advisor to executive-level decision makers serving customers in the public and private sectors – defense, federal civil, state and local government, and commercial. CALIBRE provides a wide range of energy management and integration support. Our services include audit and validation, energy management systems, energy management training, energy planning and analysis, energy security assessment, smart grid interoperability, and sustainability planning and advisory.