



Columbia's Fuel Cell Innovation Pipeline:

Building a Successful 21st Century Commercialization Model

The Elements For Growing A Fuel Cell Economy.



South Carolina Next Energy Vision: *Hydrogen & Fuel Cell Economic Strategy*



First 5 Years

Second 5 Years

10-20 Years

**Build the
Innovation Pipeline
to Fuel the SC
Economy**

Impact: Research jobs
from expanding university,
lab operations & corporate
R&D partners

**Accelerate Growth
by Harnessing
Innovation
& Scaling-Up
Commercialization**

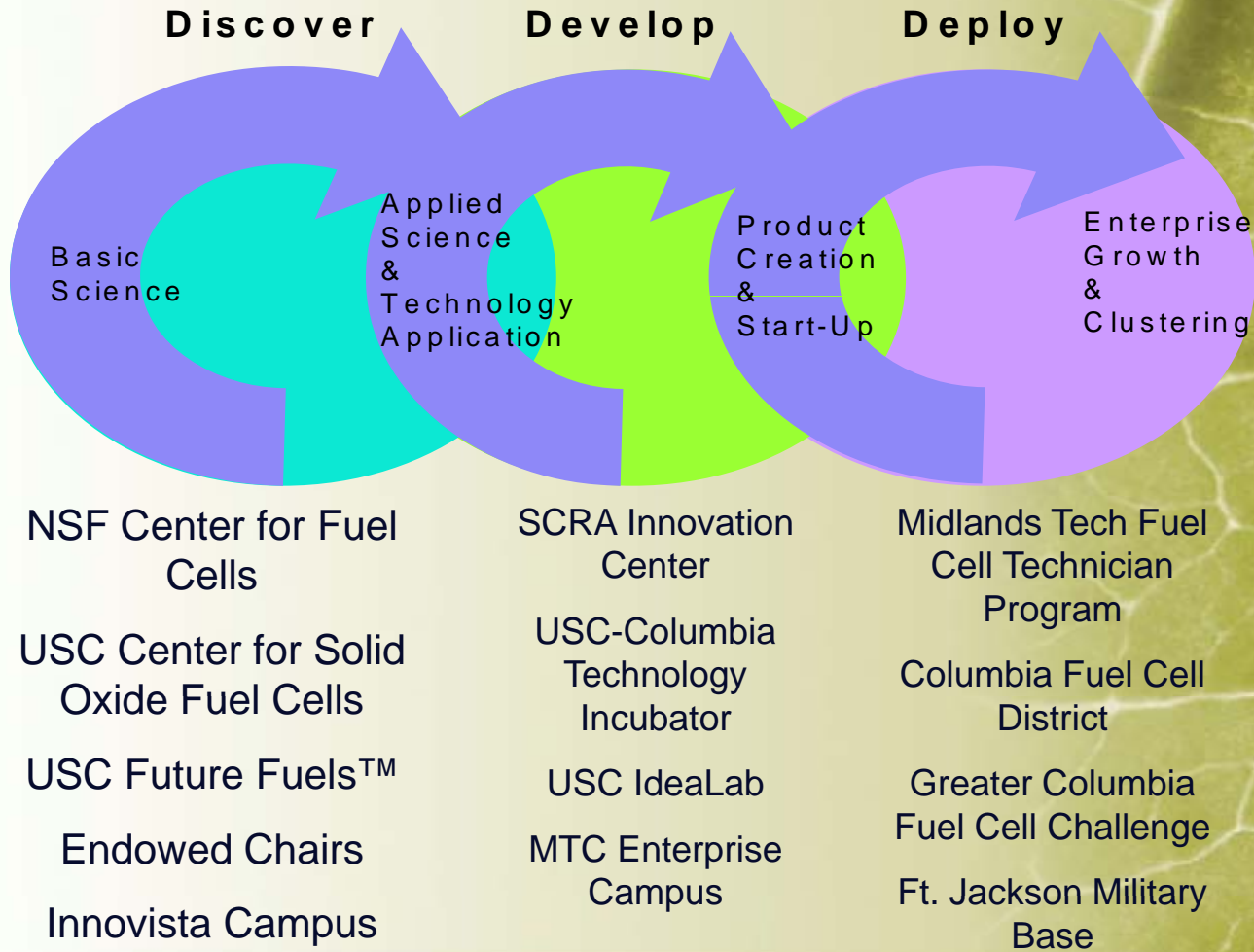
Impact: First start-ups,
expansion of corporate
operations, and
attraction of energy
system production.

**Realize Hydrogen &
Fuel Cell Clusters
Via Vital Centers of
Formation, Expansion
& Attraction**

Impact: Maturation of
regional production
centers with distinctive
hydrogen & fuel cell
supply chains.

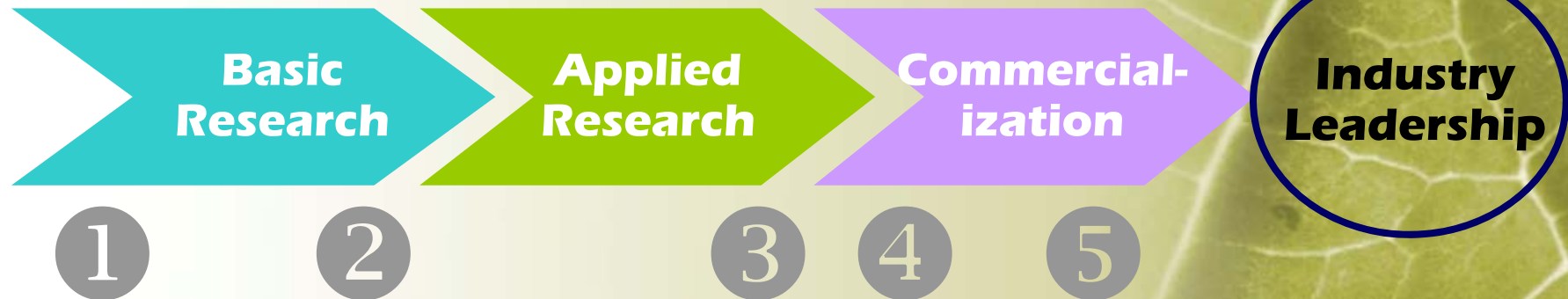
Columbia's Innovation Pipeline

A Summary of Assets



Resource Base

Investments in Innovation



LEGISLATION	FUNDING	YEAR	10-YR TOTAL
1. Endowed Chairs	\$60MM per year	2001	\$600MM
2. Research Campus Bond Act	\$440MM	2004	\$1B+
3. Innovation Centers	\$12MM	2005	\$12MM
4. Venture Capital Act	\$50MM	2005	\$50MM
5. Industry Partners Act	\$6MM per year	2006	\$60MM
6. Hyd/FC Infrastructure Act	\$5MM per year	2007	\$15MM

10-YEAR FUNDING PROJECTION

\$1.73 Billion

+ BILLIONS OF FEDERAL RESEARCH DOLLARS

Resources

Building A Competitive Advantage

Capital		
Industry Partners Fund	Hydrogen Infrastructure Development Fund	Fuel Cell Challenge

Infrastructure			
Innovista Research Campus	SCRA Innovation Center	MTC Enterprise Campus	USC Technology Business Incubator

Support			
Legislative Support	Statewide Leadership	Fuel Cell District	Workforce Development



UTC Power

A United Technologies Company



FUJIFILM



Clean, reliable power – anywhere.

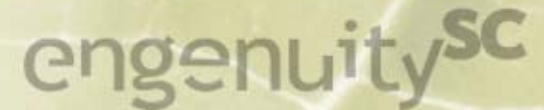




National Renewable Energy Laboratory



SRNL
SAVANNAH RIVER NATIONAL LABORATORY



Advanced Transportation



Stationary Power



Roger Dougal, professor of electrical engineering, stands with the hydrogen fuel cell that will provide power to the scoreboard at Carolina Baseball Stadium.



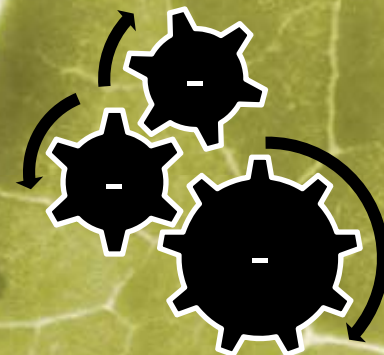
Portable Power



Hydrogen & Fuel Cell Milestones:

By The Numbers

- Investments:
 - 10+ public/private investments in fuel cell commercialization
 - 50+ in future fuels infrastructure investments
- Commercialization:
 - 15 new start ups in hydrogen, fuel cell, and alt-e
 - 20+ fuel cell deployment projects in South Carolina
- Collaboration:
 - 50+ industry relationships and collaborations
 - 20+ national and international research collaborations



Hydrogen & Fuel Cell Accolades

- USC-Columbia Fuel Cell Collaborative awarded the **2009 Southern Innovator Award** – *Southern Growth Policies Board, 2009*
- South Carolina cited as **“top five”** destination for hydrogen and fuel cell technology – *National Hydrogen Association, 2009*
- USC Future Fuels™ recognized as an industry **leading clean energy research** program in the U.S – Pew Charitable Trusts – “The Clean Energy Economy, 2009”
- 2009 **Host City** for the National Hydrogen Association’s 20th Annual Conference and Expo. Record attendance
- SC Launch recognized as a leading **Technology Based Economic Development** Program in the U.S. – *SSTI, 2009*



Summary of Opportunity

Your Competitive Advantage

Right Team and Partners

USC

SCRA

EngenuitySC

City

Private Sector

Strong Innovation Pipeline

Discovery

Development

Deployment

Market Focused Approach

Portable

Stationary

Transportation

Enabling Policy

R&D

Infrastructure

Incentives

Capital

Competitive
Environment

Columbia Fuel Cell District

Harnessing The Elements For Change.
Building A Fuel Cell Economy In The Columbia Region.



Community Outreach

Columbia College
University of South Carolina



Fueling Station

Benedict College
Allen University



Portable Power

Lexington County
A municipal partner engaged in adopting fuel cell technology.



Back-up Power

Midlands Technical College
Developing integrated curriculum to train fuel cell technicians.



Industry

Columbia Metropolitan Airport
Potential user of fuel cell technology in ground transportation vehicles.

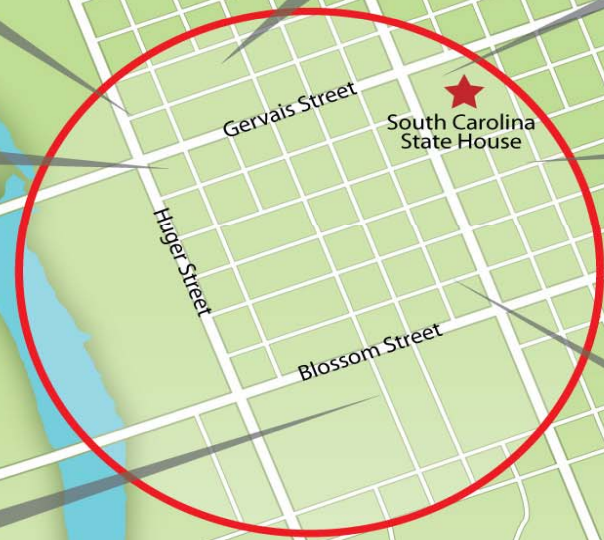


Research

Fort Jackson
The largest Initial Entry Training Center for the U.S. Army, interested in fuel cell applications for the military.



Transportation



Blazing the trail for Hydrogen & Fuel Cells



COLUMBIA SC
FAMOUSLY HOT



**NHA Conference
and Hydrogen Expo**

March 30 - April 3, 2009 • Columbia, SC