

DRILLING FOR GREEN CAPITAL:
A Policy Study on Stimulating a Green Economy in the State of Texas

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Abstract

Policy at the state level plays a vital role in shaping economic growth. Some states, such as Pennsylvania, have actively enacted policy to stimulate a green economy. This report is a comparative case study of existing policy mechanisms for economic development in Pennsylvania and Texas. Pennsylvania has focused on economic opportunities in environmental initiatives, such as brownfield redevelopment and the cleantech industry. The *Keystone Principles* and *Keystone Green Investment Strategy* are examples of key policy tools utilized in Pennsylvania to stimulate the economy and conserve natural resources. Texas has a very strong economy, but relies heavily on energy intensive industries. The state has a strong policy agenda of economic development and business recruitment. The data collected for this case focuses on these strengths. Policy mechanisms that have built the state's economy include the *Industry Cluster Initiative*, the Economic Development Bank and the *Texas Enterprise Fund*.

The Pennsylvania case study data is used to develop recommendations on how to design and deploy incentive structures for green businesses in the State of Texas. The policy study discovers existing programs in Texas correlate with Pennsylvania's policy mechanisms. A key element in Pennsylvania's programs is environmental criterion to conserve natural resources, a 'green criteria' or 'green objective.' The purpose of green criteria is to weigh in on the environmental impacts of economic activities. Three recommendations are presented for Texas:

1. Incorporate a green objective in the *Industry Cluster Initiative*.
2. Target business services to address critical needs in green sectors.
3. Create an Energy Office in Texas' environmental protection agency

These recommendations incorporate green objectives as enhancement strategies into existing programs. Instituting a green objective economic development will an important direction for Texas to maintain its competitive advantage on the global market in recruiting green businesses.

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DRILLING FOR GREEN CAPITAL:

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(I) Introduction

The Center for American Progress (CAP) outlines the benefits of a “green recovery” program as stimulating the economy with the complementary benefit of building a “green, low-carbon economy¹.” The CAP green recovery program focuses on job creation through investment in four green sectors: building energy efficiency; mass transit and rail; “smart” electrical grids; and renewable energy². These are just some examples of enterprises that can compose a green economy. A robust green economy would include any business that generates wealth *and* conserves natural resources. In the green recovery program, a \$100 billion dollar national investment is estimated to create two million jobs³. The investment capital would stem from direct investment of public funds, tax credits, and government loan guarantees, and would be a catalyst for private investment in the green businesses.

State governments have substantial budgets that can play an important role in building a green economy. Of the \$168 billion of the 2008-09 legislative budget for the State of Texas, approximately \$20 billion is appropriated for business and economic development programs⁴. The state legislature has the capacity to appropriate funds from this budget to investments in green sectors.

¹ Robert Pollin, et al., *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*, *Political Economy Research Institute (PERI) and Center for American Progress*, 2008. Available: http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf [15 Sept 2008].

² *Ibid.* p.2.

³ *Ibid.*,p.9.

⁴ State of Texas Legislative Budget Board, *Texas Fact Book 2008*, ONLINE. 2008. State of Texas. Available: <http://www.texasgovernment.info/budget.html> [10 Oct 2008].

The benefits of investing in a green business span past environmental rewards. In a report published by the National Association of Seed and Venture Funds, the common objectives in establishing state programs supporting investment is “jobs, competitiveness, and economic growth.”⁵ This report also notes that the combination of market tools and government support can be effective for stimulating local economic development⁶. Investment directly in green sectors has the potential to result in economic gains, local job creation, and conservation of natural resources. The State of Texas has an opportunity to leverage a portion of a \$20 billion budget to stimulate a green economy, and benefit from sustainable prosperity.

(II) Objective

This project explores the role of a state government in stimulating a green economy.

Specifically, the project will address the question:

What policy mechanisms are effective for stimulating a green economy in the State of Texas?

State entities have the ability to establish mechanisms that can be used to stimulate a green economy . There are many options, such as tax incentives, loan programs and guarantees. For the purpose of this research, comparable policy mechanisms used to stimulate economic growth in the green economy will be researched to qualitatively evaluate a mechanism’s relative effectiveness. It is important to distinguish that this study does not focus on the economic efficiency or benefit of such programs. The research is *not* aimed to answer whether Texas *should* develop a green economy; it

⁵ Susan P. Strommer, Seed and Venture Capital: State Experiences and Options, *The National Association of Seed and Venture Funds*, May 2006, 16.

⁶ *Ibid*, 20.

addresses if Texas *were* to develop green programs, what would be the state's strengths and weaknesses.

(III) Methods

Mechanisms for stimulating a green economy are currently being employed by several state agencies within the United States; Texas can learn from these existing programs. To build on knowledge of existing programs, a comparative case study will focus on the specific characteristics of states with current mechanisms. The comparative case study will inform a policy brief on state action used to spur economic development in the green sector.

Each case study will include a description of incentive mechanisms and current programs that have the explicit objective of supporting green businesses. Mechanisms span tax incentives, guarantees, loans, grants, direct public investment, and venture capital funds. Case study data on current programs and tools will detail state agencies involved, amount of funding, and political leaders at time of creation.

The comparative case study will be limited to two states. The states have been selected based on the political leadership, economy and current phase in the policy formation process. The political leadership criterion is employed to evaluate the impact of a strong leader as an advocate for a green economy. Second, the economy of the state must reflect a transition to new sectors. Indicators of this shift include infrastructure, such as manufacturing plants and transportation, which are being underutilized due to

declining industries. Policy formation usually follows five stages in the policy cycle: agenda setting, policy formation, implementation, and analysis. Each state chosen for the case study will be in a different stage in the policy cycle for forming mechanisms to develop a green economy.

From these selection criteria, Pennsylvania and Texas will be compared using a case study analysis method. Pennsylvania solidified a cohesive strategy for stimulating a green economy with the adoption of the *Keystone Principles* in 2005. This strategy aimed at encouraging sustainable economic development and conservation of natural resources. Governor Rendell and former Secretary McGinty were strong political advocates for the *Keystone Principles*. Currently Pennsylvania is in the implementation and analysis steps in the policy cycle. The State of Texas is in the agenda setting stage of the policy cycle, and does not have a clear political advocate for a green economy. It does have a strong network of existing infrastructure in transportation and energy sectors. In addition, the state has a strong policy agenda for economic development and business recruitment and the data collected will focus on these areas. The policy brief is being developed for Texas, and this data will be necessary for the final step of analysis.

Data from the comparative case studies of Pennsylvania and Texas will be employed in a qualitative policy analysis. Pennsylvania case study data will be used to develop recommendations on how to design and deploy incentive structures for a green economy. This will involve applying the policy criteria to the State of Texas and preparing a policy brief.

(IV) Research - Case Studies

The Keystone State

Pennsylvania is the 6th most populous state in the United States, with a population of 12.4 million⁷. The state's 2008 operating budget was \$62 billion, inclusive of federal funds and an allocation of \$28.3 billion from the state's general fund. The budget included \$650 million towards the state's energy independence strategy, \$800 million reinvestment in water and sewer infrastructure, and \$5.3 million annual budget for development of biofuels through PennSecurity Fuels⁸. In addition, the budget allocated \$2.4 billion for the construction and repair of bridges and roadways⁹. These budgetary allocations demonstrate a commitment to alternative energy sources and infrastructure related to economic development.

History of Environmental Issues

Pennsylvania residents are no strangers to environmental problems. In several instances, Pennsylvanians have been exposed to harmful substances that have impacted human and environmental health. In 1979, the Three Mile Island Nuclear Generation Station, located in Dauphin County, Pennsylvania, had a partial core meltdown. While workers and local residents were exposed to minimal radiation levels, the incident served to heighten human health concerns regarding nuclear facilities. The Three Mile Island

⁷ U.S. Bureau of the Census. Pennsylvania QuickFacts, ONLINE. 2006. Census Bureau. Available: <http://quickfacts.census.gov/qfd/states/42000.html> [19 Feb 2009].

⁸ The Commonwealth of Pennsylvania. 2008-09 Enacted Budget Highlights, ONLINE. 2008. http://www.portal.state.pa.us/portal/server.pt/gateway/PTARGS_0_113914_318790_0_0_18/08budgethighlights.pdf [19 Feb 2009].

⁹ The Commonwealth of Pennsylvania. 08-09 Budget Charts, ONLINE. 2008. Available: <http://www.portal.state.pa.us/portal/server.pt?open=512&objID=4566&&PageID=461443&mode=2> [19 Feb 2009].

event is nationally recognized as an accident that highlighted the risks of nuclear energy¹⁰.

In the early 1990s, the death of two young boys in the Commonwealth sparked a movement to extinguish corporate personhood rights. In 1994, Tony Behun died just days after unknowingly being exposed to biosolids sprayed at an abandoned mine site. A year later, another death of a young boy, Daniel Pennock, was also traced back to contamination from toxic sludge sprayed on a field. These two deaths ignited a movement to restrict the rights of corporations. After the incidents, many townships sought to impose a tax on sludge disposal. The sludge tax was challenged by the corporations as a violation of the corporation's rights to dispose of waste equitably. In 2002, the Township of Porter, Pennsylvania passed an ordinance that revoked constitutional protections for corporations. "Porter's Elimination of Corporate Personhood" ordinance was the first of its kind as Porter became the first community in the United States to revoke the constitutional rights of corporations. This monumental measure was in direct response to human and environmental effects of operations of corporations¹¹. This measure asserted the residents' concerns with business operations that contaminated the environment and endangered human health.

The Porter incident placed the environment and business interests against each other. The challenge for Pennsylvania was to rectify the opposition between these two vital aspects of the state, the economy and the environment. One answer to this challenge

¹⁰ United States Nuclear Regulatory Commission. Fact Sheet on the Three Mile Island Accident, ONLINE. 2009. Available: <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html> [March 2009]

¹¹ Kevin Danaher et al., Sludge Busters, Porter, Pennsylvania Sets New Rules for Corporations, *Building the Green Economy: Success stories from the grass roots*. (Sausalito: PoliPoint Press, 2007), 35 - 46.

was to focus on programs and initiatives that spur economic development and respect the natural system.

The Green Economy

Pennsylvania's emerging green economy is primarily focused on green building and alternative energy initiatives. These particular components of a green economy are labor intensive, and thus quickly generate green jobs¹². The Center for American Progress' report, *Green Recovery*, forecasted the impact of a federal stimulus for a green economy in the United States¹³. The report estimates that a \$100 billion federal investment over two years would result in 2 million green collar jobs nation-wide. With a \$4 billion investment into Pennsylvania's green industries, an estimated 86,000 green jobs could be created within the state. Manufacturing is the second largest employment sector in Pennsylvania¹⁴. Former Department of Environmental Protection (DEP) Secretary Kathleen McGinty sees the state's effort to encourage a green economy as being furthered by the "many skilled manufacturing workers in the state" and its commitment to renewable energy¹⁵. These two factors, skilled workers and renewable energy, are reoccurring themes throughout Pennsylvania's initiatives to build a green economy, and generate sustained economic growth for generations to come.

¹² Robert Pollin, et al., *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*, *Political Economy Research Institute (PERI) and Center for American Progress*, 2008.

Available: http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf [15 Sept 2008].

¹³ Ibid.

¹⁴ U.S. Bureau of the Census. Estimate for 2005-2007, US Census Quick Facts, ONLINE. 2008. Bureau of Census. Available: http://factfinder.census.gov/servlet/NPTable?_bm=y&q_r_name=ACS_2007_3YR_G00_NP01&-geo_id=04000US42&-gc_url=null&-ds_name=&-_lang=en [Jan 2009].

¹⁵ Steven Greenhouse, "Millions of Jobs of a Different Collar," *New York Times*, 26 March 2008, sec SPG, p 1.

Environmental and Economic Policy

Pennsylvania has seen an economic rejuvenation by recognizing opportunities in environmental issues. The state's policies have ranged from a proactive investment strategy in cleantech industry, *Keystone Green Investment Strategy*, to integrating economic development into an environmental protection agency with the creation of the Office of Community Revitalization and Local Government Support. The leadership demonstrated in developing these initiatives has been progressive and ambitious. These environmental and economic policies have distinguished Pennsylvania as a leader in developing a green economy.

As early as the 1990s, Pennsylvania embarked on exploration of alternative energy sources. The Alternative Fuels Incentive Grant (AFIG) program was established in 1992 under Act 166. The AFIG program provides grant funding to cover capital costs of infrastructure to support alternative fuel programs. The Department of Environmental Protection's call for proposals outlines eligible projects to include retrofitting vehicles, installing refueling equipment and training for alternative fuel vehicles¹⁶. As a measure to specifically encourage the production and use of ethanol and biodiesel as alternative fuel sources, Act 178 was ratified in 2004. This second act increased the AFIG program by establishing the *Biodiesel Fuel Incentive Program*, *Ethanol Fuel Incentive Program*, *Biodiesel Production Incentive Program*, and *Hybrid Electric Vehicle (HEV) Rebate Program*¹⁷. The Ethanol and Biodiesel Fuel Incentive programs provide grants to cover the "incremental cost" of using alternative fuel over gasoline and are geared towards

¹⁶ Department of Environmental Protection. The Alternative Fuels Incentive Program, ONLINE. The Commonwealth of Pennsylvania. Available: <http://www.depweb.state.pa.us/enintech/cwp/view.asp?a=1412&q=502176> [9 Feb 2009].

¹⁷ Department of Environmental Protection. Biodiesel Fuel Incentive Program, ONLINE. The Commonwealth of Pennsylvania. Available: <http://www.depweb.state.pa.us/enintech/cwp/view.asp?a=1412&q=502176> Source 11 [20 Dec 2008].

institutional and public entities¹⁸. The *HEV Rebate Program* is provided for residents that purchase a hybrid electric vehicle meeting specified mileage requirements. The combination of these programs address two key issues of alternative transportation fuel, capital cost of establishing additional fuel infrastructure and the additional cost of production and use of alternative fuels. Through these programs, Pennsylvania is subsidizing the supply and demand side of biodiesel and ethanol. These programs are seen as vital for moving towards energy independence and security, two keystone goals for the state.

In 2003, the Department of Environmental Protection (DEP) received special recognition for outstanding environmental management through the *Growing Green* program. *Growing Green*, enacted in 1999, was aimed towards the environmental issues of water quality and environmental damage from mining sites. In the span of four years, the program had funded more than \$127 million in grant money for over 1,100 projects¹⁹ located throughout Pennsylvania²⁰.

In 2005, the voters of Pennsylvania passed *Growing Greener II*, Act 45, approving \$625 million bond for addressing environmental problems. *Growing Greener II* continued to fund projects similar to the original program, and expanded the scope of eligible projects. Of particular importance to the additional goals, was an appropriation of \$50 million to the Department of Community and Economic Development (DCED) and \$230 million to the Department of Environmental Protection (DEP). The DCED was

¹⁸ Entities that are entitled to apply for grants under the program include school districts, municipalities, universities, and local government agencies, non-profit entities, and transit authorities.

¹⁹ Projects included: “create or restore wetlands, restore stream buffer zones, eliminate causes of nonpoint source pollution, plug oil and gas wells, reclaim abandoned mine lands, and restore aquatic life to streams that were lifeless due to acid mine drainage.”

²⁰ Department of Environmental Protection. DEP’S Growing Green Program Receives Prestigious Karl Mason Award for Outstanding Environmental Management, ONLINE. Press Release: May 1, 2003. Available: <http://www.dep.state.pa.us> [14 Jan 2009].

tasked to utilize the funds to find opportunities for “economic growth while balancing sensitive environmental issues.”²¹ *Growing Greener II* projects under the DCED have focused on community revitalization, maximizing use of existing structures located throughout the state²². The Department of Environmental Protection directive for this funding included continued revitalization of natural habitat and expanded to include financing the “development and deployment of advance energy projects²³.” Funding from the *Growing Greener II* bond was vital to the later establishment of the first economic development office within an environmental protection agency in the United States. DEP was able to establish leadership in not only addressing current environmental issues, but also ensuring future economic prosperity and environmental safety.

The election of Edward G. Rendell as the governor of Pennsylvania marked a new era for the Commonwealth. After his inauguration as Pennsylvania’s 45th governor on January 22, 2003, Governor Rendell quickly set a course to uphold his pledge to “revitalize communities by promoting policies and initiatives that foster a climate of environmentally sound, sustained economic growth²⁴.” One of the first actions taken in his plan was to nominate Kathleen McGinty as the Secretary of Environmental Protection. In addition, the Office of Community Revitalization and Local Government Support (OCRLGS) was created within the Department of Environmental Protection. Nationally, this was the first executive office dedicated to economic development to be

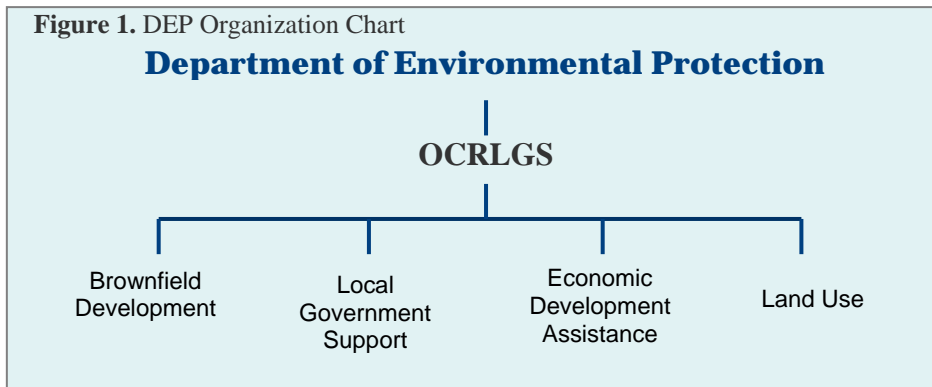
²¹ The Commonwealth of Pennsylvania. *Growing Greener II*. Available: <http://www.growinggreener2.com/> [14 Jan 2009].

²² Department of Community and Economic Development. *Growing Greener II 2008 Annual Report*, ONLINE. 2008. Available: <http://www.growinggreener2.com/default.aspx?id=548> [19 Feb 2009].

²³ The Commonwealth of Pennsylvania. *Growing Greener II*. Available: <http://www.growinggreener2.com/> [14 Jan 2009].

²⁴ Department of Environmental Protection. Office of Community Revitalization and Local Government Support. Available: <http://www.depweb.state.pa.us/ocrlgs> [14 Jan 2009].

housed within an environmental protection agency. The directive of this office was to focus on economic growth and job creation, and an infusion of funding in 2004 from *Growing Greener II* program helped to further these objectives. The action of creating a unique office within the DEP, was a clear sign that economic opportunities were a top priority to both Governor Rendell and DEP Secretary McGinty. The four main programs guided by the OCRLGS have been *Brownfield Development*, *Economic Development Assistance*, *Local Government Support*, and *Land Use* (see Figure 1). Each program is



targeted towards a particular area of environmental challenge for the state of Pennsylvania. For example, the *Brownfield Development* department offers loan guarantees, risk assurances, and direct investment in order to encourage redevelopment of brownfields. In addition, the OCRLGS is specifically designated as the liaison between local and state agencies in coordinating the implementation of economic initiatives.

A New Strategy for Economic Development

In the midst of a declining workforce, in terms of numbers and education, and a below national average job growth rate, Governor Rendell established the Economic

Development Committee in Executive Order 2004-9²⁵. The committee was tasked with developing policies and programs focused on job creation and business development, while simultaneously promoting the “stewardship and conservation” of natural resources²⁶. The members of the Committee include every major executive agency within Pennsylvania (see Figure 2). The breadth of the participating members, and the scope of the directive, is an acknowledgement of the state’s commitment to address the economic and environmental concerns simultaneously.



Keystone Principles

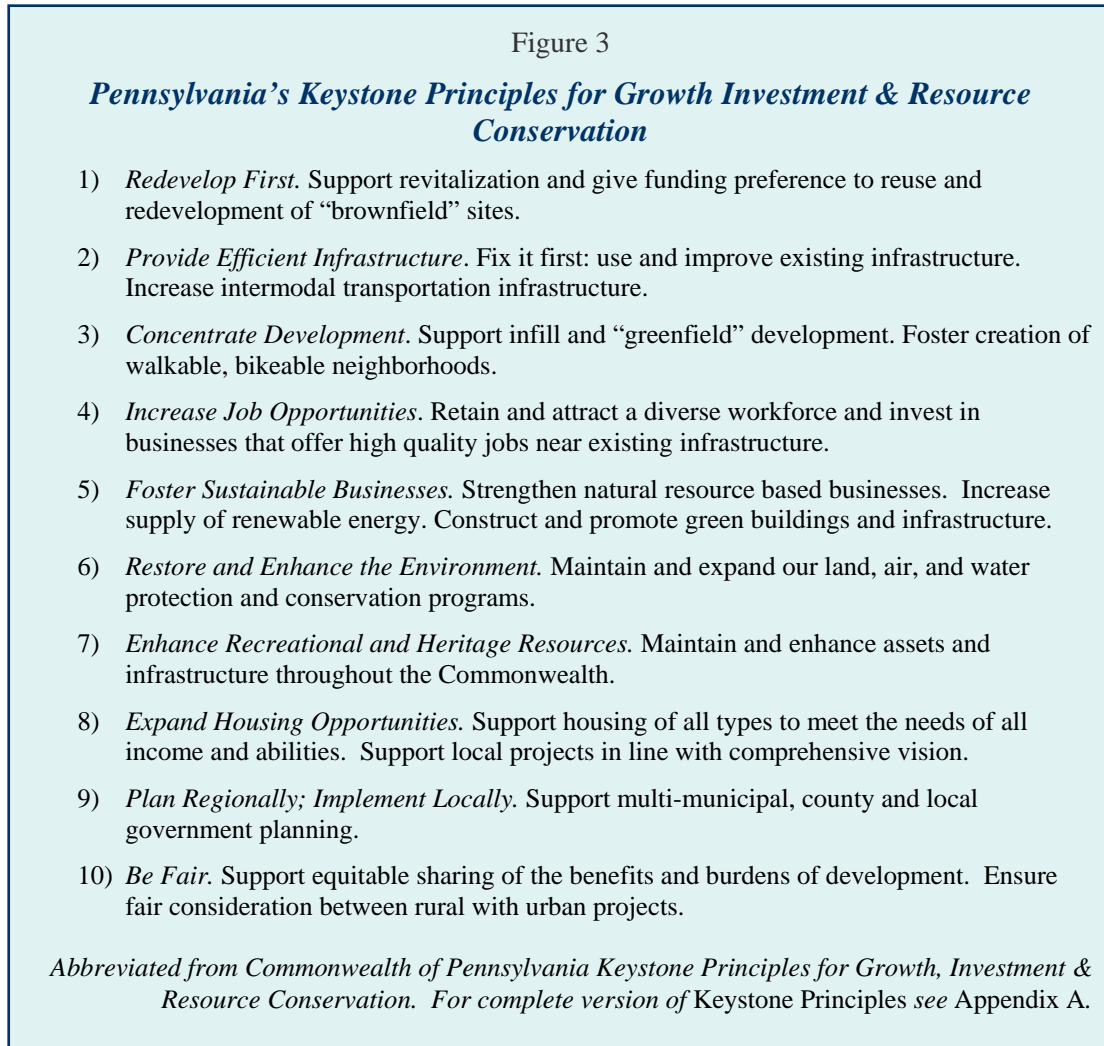
The Keystone Principles for Growth, Investment & Resource Conservation were adopted by the Economic Development Cabinet in 2005²⁷. The *Keystone Principles* were designed as a guidance document for all state agencies’ decision-making process. The goal of the *Keystone Principles* was to coordinate state agency actions towards a singular goal of sustainable economic development *and* conservation of natural resources. The

²⁵ Also referred to as “Economic Development Cabinet”

²⁶ Pennsylvania Office of the Governor. Commonwealth of Pennsylvania Executive Order 2004-0, ONLINE. Available: <http://www.dep.state.pa.us/hosting/growingsmarter/2004-9%5B1%5D.pdf> [Jan 2009].

²⁷ Pennsylvania Economic Development Council. Commonwealth of Pennsylvania Keystone Principles for Growth, Investment & Resource Conservation, ONLINE. 2005. Available: www.depweb.state.pa.us/pubpartcenter/lib/pubpartcenter/Keystone_Principles_and_Criteria.pdf [Sept 2008].

principles outline ten core goals as standards to be integrated into an agency’s current programs objectives (see Figure 3).



In addition, the *Keystone Principles* detail a core and preferential criteria to be incorporated into the agency’s decision process. For each principle several criteria were stated to clearly specify preferential consideration of projects. For example, under the 5th principle, *Foster Sustainable Businesses*, there are four criteria for prioritizing projects:

- 1) “Sustainable natural resource industry improvement or expansion (i.e. agriculture, forestry, recreation, and tourism);
- 2) Business project is energy efficient by using conservation practices and/or produces renewable energy;

- 3) Meets green building standards; and
- 4) Project supports identified regional industry clusters²⁸.”

The Cabinet, upon approval of the *Keystone Principles*, implemented a 6-month time frame for each state agency to determine the means to integrate the criteria. A special interagency team was created by the Governor’s Office as a review team to offer feedback to each agency’s plan and coordinate implementation. The importance of this action is the degree to which state agencies are attempting to coordinate and synthesize efforts to move towards sustainable economic development. The key is the reinforced effort to grow the economy, but with respect to natural resources.

Keystone Green Investment Strategy

In the same year that the *Keystone Principles* were officially adopted by the Economic Development Cabinet, the Pennsylvania Department of Treasury implemented *Keystone Green Investment Strategy*, an investment strategy for Pennsylvania. This new strategy was geared towards achieving profitable investments, encouraging job growth, and stimulating the clean tech industry within Pennsylvania. The Pennsylvania Treasurer called upon the Pennsylvania Environmental Council (PEC) to gather input from various stakeholders on the viability of investing in clean technology industry in order to:

- 1) “Generate attractive returns on investment;
- 2) Promote the creation of jobs and economic growth in Clean Technology Industries in Pennsylvania and the US;
- 3) Ensure greater energy independence and environmental protection for the Commonwealth²⁹.”

²⁸ Ibid, 5.

²⁹ Pennsylvania Treasury Department. A Keystone Green Investment Strategy for Pennsylvania, ONLINE. 2005. Available: <http://www.patresury.org/KeystoneGreen.htm> [Sept 2008].

Keystone Green Investment Strategy

includes three main initiatives: the creation of *Keystone Green Fund*, development of environmental investment screens, and the joining of the Investor Network on Climate Risk. The *Keystone Green Fund* was designed to strategically leverage public investments as an attraction for

Figure 4.

Clean Technology
As defined by PA Treasury Dept
*A new technology that is
“more efficient and less polluting.”*

Areas of investment include:

- Alternative/renewable energy
- Energy consumption reduction technologies
- Water technologies
- Advanced materials
- Air purification technologies
- Transitional infrastructure (i.e. hydrogen/E-85 fuel pumping stations)

Source: Pennsylvania Treasury Department

private investment in clean tech businesses in Pennsylvania³⁰. Investment in clean technology is viewed as a prudent investment due to the demand created by renewable portfolio standards (RPS) in Pennsylvania and surrounding states. It is estimated that the demand for electricity from alternative sources will reach 1.4 million megawatt-hours in 2009 in the Northeast alone³¹. The initial fund appropriation was \$40 million in 2005 and was divided into two sub-funds, one focused specifically on firms within Pennsylvania and the second included all US businesses. The *Keystone Green Fund* was defined to be used in “private equity and debt investments, venture capital placements and project financing” within the clean tech industry³². The appropriation of investments from the *Keystone Green Fund* relies heavily on services from outside investment management firms and consultants. This appropriation in itself has helped to drive a hub of cleantech investment professionals in Pennsylvania and created a cluster of expertise. In a national survey of cleantech investors, Pennsylvania was selected by 17% of the investors as

³⁰ Ibid.

³¹ This is based on state RPS requirements in Delaware (2%), Maryland (3%), New Jersey (4%), New York (3%), and Pennsylvania (2.5%).

³² Ibid, 13.

having the best policies and programs for encouraging cleantech start-up companies³³. In the entire US, only four states were identified by cleantech investors in being effective in encouraging investment by cleantech companies.

The second initiative within the *Keystone Green Investment Strategy* included environmental screens for all Treasury investments. The goal of the screens was to identify and avoid risks associated with climate change and carbon related liabilities³⁴. The Treasurer issued a requirement for all current portfolios to be evaluated in regard to the environmental screens, and make necessary changes to current and future investments. In addition, the Pennsylvania Treasurer's Office began developing metrics to measure the environmental impacts on financial performance³⁵.

The third element of the *Keystone Green Investment Strategy* was the Treasury Department joining the Investors Network for Climate Risk (INCR). As a General Member of INCR, the Treasury would be actively engaging major corporations and the Securities and Exchange Commission regarding climate change issues. Of particular concern to INCR (and PA Treasury) is the need for standardized reporting of greenhouse gas emissions. The *Keystone Green Investment Strategy* marked a new measure of investment strategy within the Pennsylvania Treasury. The Treasury is steadfast in ensuring that all obligations to investors are upheld within the new initiatives, and is striving to obtain triple-bottom line returns for Pennsylvania.

Pennsylvania's investment in clean energy has permeated beyond the financial sector. In 2008, Pennsylvania Energy Development Authority awarded sixteen grants totaling \$6.4 million to clean energy projects. These projects are estimated to potentially

³³ James Stack. "Cleantech Venture Capital: How Public Policy has Stimulated Private Investment." *Cleantech Venture Network, LLC and Environmental Entrepreneurs*, May 2007, 24.

³⁴ *Ibid*, 16-18.

³⁵ *Ibid*, 19.

generate 500 green collar jobs and involve more than \$38 million in private investments³⁶. In addition, the Small Business Advantage program is offering matching funds for energy efficiency upgrades. The program is aiming to minimize the burden of up-front capital cost in retrofitting equipment and reduce GHG emissions³⁷.

The Face of Pennsylvania's Green Economy

In the 21st century, political leaders have been pivotal in shifting the attitude in Pennsylvania from 'economy vs. environment' to one of synergy. Two key political leaders in this movement are Gov. Edward Rendell and former Sec. Kathleen McGinty. These two political leaders have been pivotal in constructing and supporting many of the green economy initiatives in Pennsylvania. While there have been many players in this movement, both public and private, it is these key leaders who became the face of Pennsylvania's green economy.

Governor Edward Rendell

Edward Rendell first took public office in the Pennsylvania in 1978 as district attorney of the City of Philadelphia. He continued his public service role in the city from 1992 through 1999 as the Mayor of the City of Philadelphia. During his time as Mayor, he guided the city through a renaissance of urban renewal. Of particular importance to the juxtaposition of environmental issues against economic development was the presence of several brownfields within Philadelphia's downtown area. Rendell cited the presence of these brownfields, often seen as untouchable by investors, as fueling the

³⁶ Pennsylvania Office of the Governor. Governor Rendell Announces \$6.4 Million for Clean Energy Projects, ONLINE. Press Release: October 5, 2008. Available: <http://www.depweb.state.pa.us/>. [14 Jan 2009].

³⁷ Pennsylvania Office of the Governor. Governor Rendell Announces Small Businesses Grants to Improve Energy Efficiency, Reduce Waste, ONLINE. Press Release: October 15, 2008. Available: <http://www.depweb.state.pa.us/>. [10 Jan 2009].

flight to suburban areas³⁸. Rendell adopted an attitude of economic opportunity from this environmental challenge that has carried through his public service career.

In 2003, Governor Rendell was elected as the 45th governor of Pennsylvania. As part of the executive power, Gov. Rendell was responsible for nominating former Sec. Kathleen McGinty to the Department of Environmental Protection. In addition, he has repeatedly exercised executive power to modify the structure of executive offices, appoint councils to focus on economic development and natural resources, revitalize the mission of stagnate agencies and advocate funding for a green economy. Most of the political initiatives presented in this case study were initiated under Governor Rendell's leadership. Two key pillars of Gov Rendell's platform have been economic development and energy independence³⁹. The Governor has utilized environmental opportunities to help achieve both goals for the state of Pennsylvania.

Kathleen McGinty

On June 2, 2003, Kathleen McGinty was confirmed as the Secretary of Environmental Protection. McGinty, the first woman to hold this office, came to the position with experience working with the private sector and federal agencies. McGinty has demonstrated key leadership in executing environmental programs in Pennsylvania. While it is Governor Rendell who often took the public role of gaining support for legislation, such as the *Growing Greener II* program, it was Secretary McGinty who was responsible for executing the ambitious goals.

³⁸ Vernon Loeb. "'Brown Fields' a Nightmare for Philly Officials. Officials Eyeing and Inner-City Skyline of Rusting Tanks and Dreams, Some Angrily Pointing a Finger at Superfund," *Philadelphia Inquirer*, 27 Nov. 1994, sec. B, p. 1.

³⁹ Pennsylvania Office of the Governor. Governor Rendell's Biography, ONLINE. 2008. Available: <http://www.governor.state.pa.us/> [24 Feb 2009].

Before accepting the position in the Pennsylvania Department of Environmental Protection, McGinty had served as the chair of the White House Council on Environmental Quality in the Clinton Administration. She was also instrumental in establishing the first national executive office of Environmental Policy⁴⁰. In the private sector, McGinty had served as the vice president for asset management at NatSource LLC. As part of NatSource, McGinty expanded the financial services firm to include risk and investment services for clean energy businesses. As McGinty stepped into the role of Secretary of DEP, she brought a wealth of experience in finding economic opportunities in environmental problems.

Secretary McGinty found unlikely allies in the business world in the quest to grow a green economy. PennFuture, a local citizen group, said Secretary McGinty “hit Pennsylvania like a whirlwind, working with government, the private sector, public interest organizations and everyone in between to promote and improve Pennsylvania’s environment and economy⁴¹.” She was a champion in recruiting renewable energy jobs within the state, and was pivotal in persuading several companies to locate manufacturing units in Pennsylvania. A Spanish wind energy company, Gamesa, built four new plants, which brought 1,400 new jobs, in Pennsylvania partly due to the state’s renewable energy standards⁴². In July 2008, Secretary McGinty stepped down from her appointment in the Department of Environmental Protection. Her vision of bridging the gap between environment and economy has left a lasting impression on Pennsylvania’s economy.

⁴⁰ Department of Environmental Protection. Kathleen McGinty: Biography, ONLINE. The Commonwealth of Pennsylvania. Available: <http://www.depweb.state.pa.us/dep/cwp/view.asp?a=3&q=461275> [24 Feb 2009].

⁴¹ Citizens’s for Pennsylvania’s Future. “PennFuture Lauds Kathleen McGinty as Trailblazer for Pennsylvania’s Environment and Economy,” *Energy & Ecology Business*, 28 July 2008, 68.

⁴² Vanessa Gera. “Green activists find new ally in US unions,” *The Associated Press*, 14 December 2008.

A New Pennsylvania

“...I promised to work hard to create a ‘New Pennsylvania.’”
-Governor Rendell, 2004⁴³

With the Porter city ordinance in 2002, the economy and environment had diverged in Pennsylvania. Political leadership from Governor Rendell and Secretary McGinty steered the state to a new vision, a *new* Pennsylvania. Key program initiatives, from the establishment of the Office of Community Revitalization and Local Government Support (OCRLGS) to the adoption of the *Keystone Principles*, have captured economic opportunities in environmental issues. These aggressive policy mechanisms to stimulate a green economy in Pennsylvania place it in a prime position to benefit in the current market trends towards renewable energy and green building.

⁴³ Pennsylvania Office of the Governor. PA Governor Rendell Delivers on Promises to Create a New Pennsylvania, ONLINE. Press Release: December 21, 2004. Available: <http://www.state.pa.us/> [14 Jan 2009].

The Lone Star State

In 2007, the US Census Bureau estimated that Texas was the home to close to 24 million people. Texas is renowned for its strong economy. The manufacturing industry is the third largest employment sector in the state, preceded by human services⁴⁴ and professional services^{45,46}. In the midst of an economic downturn in last quarter of 2008, *Financial Times* ranked Texas' economy, based on key financial factors, number one out of the 50 states⁴⁷. For seven consecutive years, Texas has been the top exporting state, according to the US Department of Commerce. In 2008 alone, exports totaled \$192 billion, with top exporting industries included chemicals, computers and electronics, machinery, petroleum and coal, and transportation equipment⁴⁸. Texas is also home to more Fortune 500 companies than any other state⁴⁹. The state is home to many energy-intensive industries, such as petroleum refining, chemical and aluminum manufacturing⁵⁰. The nature of the current economy will continue to strain natural resources.

Texas Size Environmental Challenges

In a report released by Environmental Defense Fund, *Texas at a Crossroads*⁵¹, Texas was identified as the seventh largest emitter of carbon dioxide in the world with

⁴⁴ Including educational services, and health care and social services

⁴⁵ Including professional, scientific, and management, and administrative and waste management services.

⁴⁶ U.S. Bureau of the Census. Texas Fact Sheet 2005-2007, ONLINE. 2008. Census Bureau. Available: <http://factfinder.census.gov> [19 Feb 2009].

⁴⁷ Texas Office of Governor. Texas Brags, ONLINE. 2009. The State of Texas. Available: http://www.texaswideopenforbusiness.com/assets/documents/Texas_Brags.pdf [19 Feb 2009].

⁴⁸ Texas Office of the Governor. Texas is Number One Exporting State for 7th Consecutive Year, ONLINE. Press Release: February 12, 2009. Available: <http://governor.state.tx.us/news/press-release> [20 Feb 2009].

⁴⁹ Fortune. Fortune 500:States, ONLINE. 2009. Available: <http://money.cnn.com/magazines/fortune/fortune500/2009/states/TX.html> [10 April 2009].

⁵⁰ Environmental Defense Fund. *Texas at a Crossroads*. ONLINE. 2009. Available: www.edf.org/documents/9148_TexasCrossroads.pdf [19 Feb. 2009].

⁵¹ Ibid, 4.

annual emissions of 664 million metric tons from fossil fuel combustion⁵². The state is expected to suffer rising temperatures, precipitation variability, more severe weather events, and coastal erosion. *Texas at a Crossroads* states Texas is a worldwide leader in “the frequency and variety of severe and high-impact weather⁵³.” This trend is only expected to increase with rising temperatures in the next half-century, with costly damage to southeast Texas. In 2008, Hurricane Ike is estimated to have caused \$22 billion in damage in the Houston and surrounding area⁵⁴. The Texas coast is also threatened by the prediction of rising sea levels due to global warming. With one-foot rise in sea levels, the coast is predicted to lose 402 square miles of valuable land⁵⁵. These expected impacts of climate change threaten the ecosystems and economy of the state.

Energy : Renewable Portfolio Standard

As part of Texas’ electricity industry restructuring legislation in 1999, the state passed a *Renewable Portfolio Standard* (RPS). The RPS required electricity providers to collectively provide 2,000 megawatts (MW) of additional renewable energy by 2009. In 2005, the requirement was increased to 5,880 MW by 2015 and a target of 10,000 MW in 2025⁵⁶. By the year 2009, the Texas RPS is estimated to avoid 3.3 million tons of CO2 emissions annually⁵⁷.

As part of the RPS, a Renewable Energy Credit (REC) trading program was put in place until 2019. Utilities can meet renewable energy requirements through direct

⁵² Emission data from reported by EPA. CO₂ Emissions from Fossil Fuel Combustion, ONLINE. 2005. Available: www.epa.gov/climatechange/emissions/downloads/CO2FFC_2005.pdf [Feb 2009].

⁵³ Environmental Defense Fund, *Texas at a Crossroads*, ONLINE. 2009. p 7. Available: www.edf.org/documents/9148_TexasCrossroads.pdf [20 Feb 2009].

⁵⁴ *Ibid*, 7.

⁵⁵ *Ibid*, 8.

⁵⁶ State Energy Conservation Office. *Texas Renewable Portfolio Standard*, ONLINE. Available: http://www.seco.cpa.state.tx.us/re_rps-portfolio.htm [22 Feb 2009].

⁵⁷ Pew Center on Global Climate Change. *Renewable Portfolio Standard (RPS)*, ONLINE. 2009. Available: http://www.pewclimate.org/what_s_being_done/in_the_states/rps.cfm [22 Feb 2009].

procurement or by purchasing RECs. The renewable energy requirement has continued to drive the demand for wind energy. The RPS is widely seen as a major driving factor in Texas becoming the number one wind energy producer in the US. In addition, the RPS was expanded the industry research and development to other energy sources, such as solar and methane capture⁵⁸. In an effort to make biomass energy sources from the use of crops and animal waste more attractive, the 2005 Senate Bill 20 requires 500 MW of non-wind renewable generation by 2025⁵⁹. The EPA sites many policy benefits from a RPS, including avoided environmental damage, diversity of energy supply, lower natural gas prices, less volatile electricity prices, and economic development for local communities⁶⁰. The Texas RPS can be seen as a net benefit to the economy and the environment.

Texas, *Wide Open for Business*

In an address to the National Federation of Independent Businesses (NFIB), Governor Rick Perry commended businesses for “actually doing what governments try to take credit for -creating jobs, attracting investment and generating wealth.”⁶¹ This statement is indicative of the general sentiment in Texas politics on the role of government and businesses. Governor Perry laid out the “basic responsibilities” of government include providing a business environment of low taxes, a fair regulatory climate and legal system, and a strong education base⁶². With this strategy in hand, Governor Perry has actively recruited businesses with campaigns such as *Texas, Wide Open for Business*. This program strives to distinguish Texas as the “premier location for

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ U.S. Environmental Protection Agency. Renewable Portfolio Standards Fact Sheet, ONLINE. 2008. Available: http://www.epa.gov/chp/state-policy/renewable_fs.html [22 Feb 2009].

⁶¹ Governor Rick Perry. *Keynote Speech*: Conference for National Federation of Independent Businesses, February 19, 2009. VIDEO. State of Texas. Available at: <http://governor.state.tx.us/news/press-release/11960/> [24 Feb. 2009].

⁶² Ibid.

businesses⁶³”. A business can quickly access information detailing business-friendly legislation, financial resources, major industries, transportation infrastructure and workforce potential; all part of the “Texas advantage⁶⁴.” The campaign for marketing a business-friendly environment has been very effective in the business community. Among many other accolades, Texas ranked second nationally in the number of Fortune’s 2008 “100 Best Companies to Work For” located within the state⁶⁵. Besides an image campaign, Texas has established the *Texas Enterprise Fund*, the *Emerging Technology Fund*, an *Industry Cluster Initiative*, and an Economic Development Bank. All of these programs focus on furthering Texas’ attractiveness to the private sector.

Industry Cluster Initiative

The Texas Legislature passed Senate Bill 275 in 2003, calling for a statewide strategy for sustained economic competitiveness. From this bill, the *Industry Cluster Initiative* was inaugurated to focus the use of state resources on key industries that held the promise of sustained growth, job creation and economic development. Six industry clusters were identified: advanced technology and manufacturing; aerospace and defense; biotechnology and life sciences; information and computer technology; petroleum refining and chemical products; and energy. The Governor’s Competitiveness Council was formed in 2007, and is comprised of public and private leaders from each targeted industry clusters. The Council was tasked with developing an assessment of market issues and opportunities.

⁶³ Texas Office of Governor. Texas Advantage, ONLINE. 2009. The State of Texas. Available www.texaswideopenforbusiness.com/texas-advantage [18 Feb 2009].

⁶⁴ Ibid.

⁶⁵ Fortune. 100 Best Companies to Work For, ONLINE. 2009. Available: <http://money.cnn.com/magazines/fortune/bestcompanies/2009/index.html> [27 Feb 2009].

The *Meeting Industries' Critical Workforce Needs* grant program was developed to specifically target the six industry clusters' critical market issue of workforce training. In 2007, the Texas Workforce Commission granted approximately \$1.2 million to two organizations working to address the energy sectors job training needs. The Texas State Technical College West Texas received \$523, 430 to develop online training for wind energy technicians⁶⁶. *WorkSource* received a grant in the amount of \$628,420 to perform a regional workforce skill assessment specifically focused on the renewable energy industry⁶⁷. *WorkSource*, located in Austin, TX, is an alliance between education institutions, local government entities, non-profits and businesses⁶⁸⁶⁹. The workforce grantees demonstrate the energy industry cluster's focus on renewable energy business opportunities.

Economic Development Bank

The Economic Development Bank (EDB), as it exists today, was established in the Texas Executive Branch in 2003. The two main goals of the EDB are to ensure that Texas provides “globally competitive, cost-effective state incentives” for attracting businesses to expand or relocate, and to ensure that private enterprises have “access to capital for economic development⁷⁰.” The resources of the bank include the *Emerging Technology Fund*, *Texas Enterprise Fund*, loan assistance and tax incentives. Tax incentives are granted to communities to help further encourage cooperation with

⁶⁶ Texas Workforce Commission. TWC Announces Grant Recipients for Energy, Aerospace and Defense Clusters, ONLINE. Press Release: March 12, 2007. Available: www.twc.state.tx.us/news/press/2007 [10 Feb 2009].

⁶⁷ Ibid.

⁶⁸ *WorkSource* is comprised of “Austin Community College, the Greater Austin Chamber of Commerce, Capital IDEA and local employers.”

⁶⁹ Ibid.

⁷⁰ The State of Texas. *Government Code 4.F. Ch 489*. Chapter 489. Texas Economic Development Bank, ONLINE. 2004. Available:<http://tlo2.tlc.state.tx.us/statutes/docs/GV/content/htm/gv.004.00.000489.00.htm> [March 2009].

businesses expanding or relocating in the area⁷¹. In addition, the loan guarantee incentive includes the bank making direct loans to “near-bankable businesses” to assist them in receiving additional lending, granting low interest loans, and providing bond-based, long-term financing⁷². In general the EDB acts as a connector between businesses, communities and available investment capital. The duty of the EDB extends beyond financial resources to include business services and inform on regional economic development plans⁷³. This entity has been essential in compiling statewide information on economic development plans and financial incentives offered by the state.

Texas Enterprise Fund – “Closing the Deal”

In 2003, the Texas Enterprise Fund (TEF) was enacted with an initial appropriation of \$295 million, and additional funding of \$180 million in 2005. The fund is approved to finance economic development projects, such as infrastructure and community development, job training programs, and direct business incentives⁷⁴. All proposals must receive final approval by the state governor. The program is estimated to have successfully helped in procuring 51,000 jobs and \$13.6 billion in capital investment since its conception⁷⁵. This fund is described as the “deal closing fund⁷⁶,” and is a substantial financial resource, at close to half billion dollars, that state leaders aggressively use to attract and retain businesses.

⁷¹ Texas Office of the Governor. Economic Development Bank, ONLINE. The State of Texas. Available: http://governor.state.tx.us/ecodev/business_resources/economic_development_bank/ [Feb 2009].

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Texas Office of the Governor. Investing for Growth, ONLINE. Available: http://governor.state.tx.us/priorities/economy/investing_for_growth/ [March 2009].

⁷⁵ Texas Office of the Governor. Texas Enterprise Fund, ONLINE. The State of Texas. Available: <http://www.texaswideopenforbusiness.com/financial-resources/texas-enterprise-fund.html> [March 2009].

⁷⁶ Ibid.

Emerging Technology Fund

Texas House Bill 1188 established the *Emerging Technology Fund* in 2005. The *Emerging Technology Fund* is directed to further activities that will result in “high-quality new jobs in the state” or may result in a significant “medical or scientific breakthrough or breakthrough in the area of clean energy.”⁷⁷ Since 2006, the ETF has contributed \$53 million to early-stage companies and universities⁷⁸. The legislation includes a preference for projects within the six target industry clusters *and* that have obtained matching commercialization, federal, or other outside investments⁷⁹.

Texas Leadership

In the current political environment, sustainable growth and a green economy are not central drivers of state policy. Some state officials are beginning to see opportunities in the green sectors; many are still resistant to change. Texas has no long-standing political leader as an environmental advocate at the state level. Some state congresspersons have started to approach the issue of climate legislation and energy concerns, one such politician is Senator Rodney Ellis of Houston, Texas. In addition, members of the business community are also actively engaging politicians regarding climate issues. T. Boone Pickens has become a national recognized advocate of shifting energy consumption to domestic sources, such as natural gas and renewable sources⁸⁰. In addition, local communities will play an important role in the green economy. The City of Austin has successfully demonstrated the ability to find economic opportunities in green

⁷⁷ The Legislature of the State of Texas. *House Bill No. 1188*, ONLINE. 2005. The State of Texas. Available: <http://www.texasone.us/site/DocServer/HB01765F.pdf?docID=581> [Feb 2009].

⁷⁸ Texas Office of the Governor. Gov Perry: We Should Reduce the Weight of Government on Texas Business, ONLINE. Press Release: February 17, 2009. Available: <http://governor.state.tx.us/news/press-release> [20 Feb 2009].

⁷⁹ Texas Office of the Governor. Emerging Technology Fund, ONLINE. The State of Texas. Available: http://members.texasone.us/site/PageServer?pagename=etf_about [Jan 2009].

⁸⁰ PickensPlan. The Plan, ONLINE. 2008. Available: <http://www.pickensplan.com/theplan/> [March 2009]

enterprises. Each of these characters will play vital roles in shifting the policy agenda to sustainable economic growth.

Rodney Ellis – Policy Advocate

Rodney Ellis was elected to the Senate of Texas in 1990. Since then, Senator Ellis has worked on key legislative initiatives including economic development, education, and workforce development⁸¹. Senator Ellis is currently taking a leadership role in addressing climate risks and carbon emissions in the current legislative session. In February 2009, he released seven proposed bills as an “environmental package” with claims to “increase the use of renewable energy, significantly cut carbon emissions, help create jobs and boost energy efficiency⁸².” Senator Ellis’ “environmental package” includes a Texas Cap & Trade system (SB136), tax cuts for green initiatives in building and transportation (SB 128, SB130, and SB 133), and a update to the RPS to require 5% of *peak power* to come from renewable sources (SB435)⁸³. Senator Ellis is an advocate for Texas taking a leadership role in addressing carbon emissions and also for the state to capitalize on the economic opportunities in clean energy. Senator Ellis stated that “[Texas] has barely begun to take advantage of the economic benefits” of environmental initiatives. Speaking at the Texas Energy Future Conference in February of 2009, Senator Ellis urged Texas to quickly address climate change, and be part of the solution⁸⁴. Senator Ellis’ long-standing history in the Texas Senate and recent advocacy for finding

⁸¹ The Senate of the State of Texas. Senator Rodney Ellis, District 13, ONLINE. The State of Texas. Available: <http://www.senate.state.tx.us/75r/Senate/members/dist13/dist13.htm> [March 2009].

⁸² The Office of Senator Rodney Ellis. Ellis Fighting for a Greener, More Eco-Friendly Texas, ONLINE. Press Release: February 18, 2009. The State of Texas. Available: <http://www.senate.state.tx.us/75r/Senate/members/dist13/pr09/p021809a.htm> [Feb 2009].

⁸³ Ibid.

⁸⁴ Senator Rodney Ellis. Press Conference: Texas Energy Future Conference, VIDEO. February 18, 2009. The State of Texas. Available: <http://www.senate.state.tx.us/avarchive/ramav.php?ram=00003832> [19 Feb 2009].

economic opportunities in climate change could prove to be vital for future green legislation.

T. Boone Pickens – Energy Entrepreneur

T. Boone Pickens has a strong presence on the national discussion of energy production. In recent years, the historic oilman has become a advocate for domestic sources of energy, including natural gas, wind and solar. The Pickens Plan includes an expansion of wind energy to 22% of all electricity use, an upgraded transmission grid, and a switch to natural gas as a transportation fuel⁸⁵. Mr. Pickens has generated much attention to renewable energy sources in US, and especially in Texas. A strong entrepreneur advocate for green technology and advancement is important in Texas. The political atmosphere in the state requires acceptance of new policy initiatives from the business community.

Austin – An Incubator of a Green Economy

In addressing the future of the Texas economy and the prospect of a thriving green economy, Austin, TX is a valuable resource located in the heart of the state. The city is the capital of Texas and is home to the University of Texas, a renowned research and educational facility. Austin has also been herald for actively encouraging investment in sustainable businesses. In 2007, Austin was ranked first nationally as a “cleantech incubation cluster” by SustainLane, a non-profit based in San Francisco, CA⁸⁶. SustainLane highlights four key attributes necessary to encourage a “cleantech incubation cluster”: “abundant start-up venture capital, a network of investors, collaboration with academic or federal laboratories, active state or local participation and incentives.”⁸⁷

⁸⁵ PickensPlan. The Plan, ONLINE. 2008. Available: <http://www.pickensplan.com/theplan/> [March 2009].

⁸⁶ SustainLane. This is where the ‘cleantech’ grows. *American City & County*. 1 March 2007, 10.

⁸⁷ Ibid.

These assets identified within Austin, could serve as an anchor in a developing state-wide investment in cleantech.

In addition, the local municipal utility has been very successful in marketing green power to business customers. The National Renewable Energy Laboratory ranked GreenChoice, Austin Energy's green power program, as the national top-rated green utility for providing renewable energy to customers at a lower cost than standard electric rates and price guarantee for renewable energy to business customers⁸⁸. The business strategies developed by Austin Energy in growing the green power market could serve as a model in other major metropolitan areas in Texas.

A Great State to Do Business In

Texas has a strong economy, with accolades from *Financial Times* and *Fortune* 500 companies. The state's campaign, *Texas Wide Open for Business*, and economic development programs are succeeding in attracting and retaining businesses. But the state faces impending environmental issues from climate change. The state has had some success in renewable energy with the Texas RPS driving the state to number one in wind energy producer in the US, surpassing California in June 2008. Texas' expertise and knowledge base in the energy sector is a clear competitive advantage in attracting investment in cleantech. Environmental concerns may not be the prime motivation behind state policies, but they can deliver results that benefit the economy and environment.

⁸⁸ U.S. Environmental Protection Agency. Austin Energy Green Power Pricing Programs seen as National Model. *Inside Green Business*, 18 April 2007, vol 2, No.16.

(V) Policy Study

The New Pennsylvania Forges A Way for a Greener Texas

Pennsylvania has utilized many policy mechanisms to stimulate a green economy. These have included adopting the *Keystone Principles* and the *Keystone Green Investment Strategy*; grant programs to encourage alternative transportation fuels; and a unique office to foster economic development within an environmental protection agency. Each of these mechanisms focuses on economic opportunities *and* conservation of natural resources. Environmental policy scholars note that state governments are “strongly inclined to maximize the benefits of any actions for their respective state, whether environmental improvement or varied economic advantages⁸⁹.” Pennsylvania’s motivation in including environmental criteria in economic programs is an attempt to maximize the value of the *economy* and *environment*.

Based on the data collected from Pennsylvania, policy tools for stimulating a green economy include a statewide strategy, regulation, services, grants and financial instruments. A key element in these mechanisms is environmental criterion to conserve natural resources, a ‘green objective’ or ‘green criteria.’ In programs with proposal selection criteria are utilized, one criterion speaks to the environmental impacts of the project, and in other programs, a green objective is specified. In applying this framework to Texas, we find that the state currently has many of the same mechanisms in place (see Table 1). The key difference between the two states is the inclusion of green criteria or objective. The fact that Texas currently has many similar mechanisms in place is an advantage. Instead of creating new initiatives, the state government can focus on enhancement strategies that include environmental objectives.

⁸⁹ Barry Rabe and Phillip Mundo. *Business Influence in State-Level Environmental Policy*. ed. Michael E. Kraft and Sheldon Kamieniecki. “Business and Environmental Policy: Corporate Interests in the American Political System” (Cambridge: MIT Press, 2007) 266.

Table 1. State Policy Mechanisms for Economic Development

| | Pennsylvania | | | Texas | | |
|------------------------------|---|----------------------------------|-----------------------------|--|----------------------------|-----------------------------|
| Policy Mechanism | Policy/Program | Agency | Green Objective or Criteria | Policy/Program | Agency | Green Objective or Criteria |
| Strategy | <i>Keystone Principles</i> | Executive Agencies | Yes | <i>Industry Clusters Initiative</i> | Office of the Governor | No |
| Regulation | Alternative Energy Portfolio Standard | Pennsylvania PUC | Yes* | Renewable Portfolio Standard | Texas PUC | Yes |
| Services | Office of Community Revitalization and Local Government Support | Dept of Environmental Protection | Yes | <i>Meeting Industries Critical Workforce Needs</i> | Texas Workforce Commission | No** |
| Grants | PEDA Grants | PEDA | Yes | Texas Enterprise Fund | Economic Development Bank | No |
| | Small Business Advantage Program | Dept of Environmental Protection | Yes | Emerging Technology Fund | Economic Development Bank | Yes*** |
| Financial Instruments | Keystone Green Investment Strategy | Pennsylvania Treasury | Yes | Economic Development Bank | Office of the Governor | No |

* Pennsylvania’s Alternative Energy Portfolio Standard has received much criticism for its definition of ‘renewable energy.’ The statute includes burning of waste coal, coal mine-methane, and incineration of waste from large animal processing plants as renewable sources of energy. Environmental groups have contested the merits of the standard.

** Workforce grants in Energy Sector have been awarded for job training in renewable energy sectors, but this focus is not a requirement in the program.

*** The ETF statute allows funding in activities that may result in a significant “medical or scientific breakthrough *or* breakthrough in the area of clean energy.”⁹⁰

⁹⁰ The Legislature of the State of Texas. *House Bill No. 1188*, ONLINE. 2005. The State of Texas. Available: <http://www.texasone.us/site/DocServer/HB01765F.pdf> [Feb 2009].

Recommendations for Texas

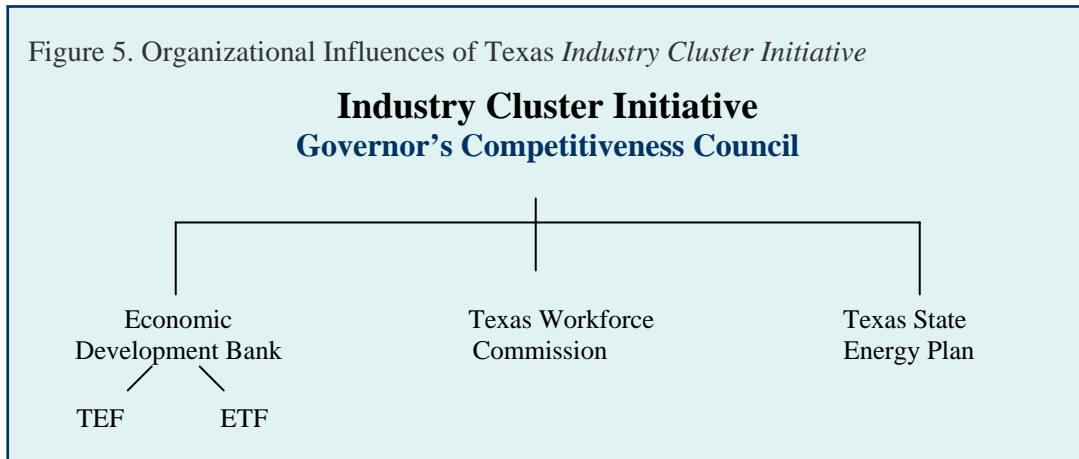
Two pivotal policy mechanisms in Pennsylvania's journey in building a green economy have been the *Keystone Principles* and *Office of Community Revitalization and Local Government Support* (OCRLGS). These two mechanisms have served to influence decisions throughout the executive branch and local communities. The *Keystone Principles* is directly responsible for initiating the *Keystone Green Investment Strategy*, inform grant decisions in PEDA and Small Business Advantage Program, and guide services and project focus in the OCRLGS. Due to the breadth of influence in these two mechanisms, it is advisable to focus efforts in the same mechanisms in Texas, strategy and services. The following three recommendations are designed as enhancement strategies to maximize benefits in existing programs:

1. Incorporate a green objective in the *Industry Cluster Initiative*.
2. Target business services to address critical needs in green sectors.
3. Create an Energy Office in Texas' environmental protection agency.

1. Incorporate a green objective in *Industry Cluster Initiative*.

The *Industry Cluster Initiative* serves to inform selection criteria for several other programs in Texas, including the *Emerging Technology Fund*, Texas Workforce Commission and the Economic Development Bank. The six industry clusters are identified in the statute and are not easily modified, but the execution of *how* to target these clusters are developed by the Governor's Competitiveness Council. For example, the Council developed the 2008 Texas State Energy Plan that included thirty-seven overarching recommendations in areas from electricity generation, transmission, and workforce training. An executive order from the Office of Governor could feasibly

expand the Council's directive to assess the target industries economic opportunities *and* environmental impacts. In doing so several other programs would sequentially be affected by the Council's recommendations (see Figure 5).



Amending the legislation to include green objective would also be beneficial but would require more political effort. Using either means, reforming the six-target industry clusters to consider environmental impacts and conservation of natural resources influences a substantial amount of funding. A green objective in a statewide strategy will strengthen the states' competitiveness in green sectors.

2. Target business services to address critical needs in green sectors.

The Texas Workforce Commission currently awards grants in the renewable energy industry to address the critical need for a technical workforce. This is in response to economic opportunity in the renewable energy sector and is not a requirement in the selection criteria. The Economic Development Bank is another agency that offers business services to new and expanding enterprises. These services include financial instruments, information on local and regional economic development plans, and other resources available within the state. The EDB could be reformed to address the growing

demand for capital and access to credit for green businesses. Introducing green criteria into the selection process for prioritizing projects to receive loan guarantees, access to capital and tax incentives would allow sustainable enterprises to thrive in the current challenging capital market. The EDB serves not only private clients, but also ensures capital is available for communities' economic development plans⁹¹. By reforming the selection process in the EDB, private and public realm will be influenced to consider environmental impacts of economic growth.

3. Create an Energy Office within Texas' environmental protection agency.

Pennsylvania's *Office of Community Revitalization and Local Government Support* was created within DEP in 2003. This office focused on addressing environmental issues that plagued the state, such as brownfields, and realize economic opportunities within these challenges. Texas is also faced with a similar challenge in the energy sector. On the one hand, Texas faces serious environmental issues in air quality, greenhouse gas emissions and water impacts from climate change. But there is also an economic opportunity in the energy sector.

The Pennsylvania Treasury Department defines cleantech as a new technology that is "more efficient and less polluting"⁹² (see Figure 4). The Cleantech Venture Network has categorized the industry into 10 major sectors, including energy related, recycling and waste, transportation, and water and wastewater⁹³. The energy technology

⁹¹ The State of Texas. *Government Code 4.F. Ch 489*. Chapter 489. Texas Economic Development Bank, ONLINE. 2004. Available: <http://tlo2.tlc.state.tx.us/statutes/docs/GV/content/htm/gv.004.00.000489.00.htm> [March 2009].

⁹² Pennsylvania Treasury Department. *A Keystone Green Investment Strategy for Pennsylvania*, ONLINE. 2005. Available: <http://www.patreasury.org/KeystoneGreen.htm> [Sept 2008].

⁹³ James Stack. "Cleantech Venture Capital: How Public Policy has Stimulated Private Investment." *Cleantech Venture Network, LLC and Environmental Entrepreneurs*, May 2007, 24.

sector is the driving force in the growth in the clean tech industry⁹⁴. In 2006 alone, investments in the energy related sector totaled \$2.14 billion, more than double the investment in 2005. This sector is regarded as having the best investment potential⁹⁵. The 2008 Texas State Energy Plan outlines business opportunities in transmission, alternative generation, distribution, demand-side management, and workforce technicians specific to the state of Texas. While there are many offices in the state overseeing one aspect of the energy industry, there is no singular office that is tasked with harmonization of all the different parts. In the Texas State Energy Plan, the Council recommends, “the state should create a council... or designate an official tasked with coordinating energy functions⁹⁶”. The entity tasked with energy coordination should reside in the Texas Commission on Environmental Quality. The executive agency’s mission is to protect natural resources and ensure sustainable economic development⁹⁷. Designating an Energy Office in TCEQ would naturally coincide with the agency’s existing mission and goals. In addition, it would offer an opportunity for an agency often regarded as a regulatory arm to expand into taking a proactive approach to environmental issues.

A Greener Future for Texas

Pennsylvania’s green objective in economic development mechanisms has distinguished it on the national playing field, and serves as a competitive advantage in attracting and retaining green industries. Texas may be able to do the same by incorporating enhancement criteria to existing state programs. In this way, Texas will be

⁹⁴ James Stack. “Cleantech Venture Capital: How Public Policy has Stimulated Private Investment.” *Cleantech Venture Network, LLC and Environmental Entrepreneurs*, May 2007, 12.

⁹⁵ *Ibid*, 12.

⁹⁶ Governor’s Competitiveness Council. The 2008 Texas State Energy Plan, ONLINE. The State of Texas. Available: http://governor.state.tx.us/files/gcc/2008_Texas_State_Energy_Plan.pdf [10 March 2009].

⁹⁷ Texas Commission on Environmental Quality. Overview of TCEQ, ONLINE. The State of Texas. Available: <http://www.tceq.state.tx.us/about/> [10 March 2009].

able to preserve the unique programs within the state, and increase success in recruiting green businesses.

(VI) Conclusion

This report is a comparative case study of two states' economic development paths. Each state has strengthened in different arenas. Pennsylvania has forged a strong stance in the market area of green businesses. The state's objective in finding economic opportunities in environmental issues has resulted in a national leading position in cleantech investment and green industry manufacturing. Texas has pursued a strong agenda in economic growth by fostering a business-friendly environment. The state now has one of the strongest economies in the nation, but is also threatened by dependence of industries on limited natural resources. Key aspects of this field could be further studied and supplement this report.

Areas for Further Study

Two key areas require further study in the arena of green economy: structure of the green criteria and policy analysis of green programs. The environmental criterion employed to achieve a green objective can take many different forms. A comprehensive review of existing metrics and structures used in this area would be beneficial for future programs. The second piece that is critical to furthering green policy in economic development is quantitative evaluation of key performance indicators of existing green programs. Evaluation of the number of jobs created and revenue generated within the existing programs is necessary. These basic economic measures are utilized in policy

analysis for economic development tools. As such, the same study within the green sector would be helpful in comparing green programs with traditional economic policy.

Political Environment

The 2010 Texas gubernatorial race will impact the feasibility of the policy recommendations presented in this report. Governor Rick Perry has taken a strong stance against carbon legislation at the federal level. In November 2008, he publicly submitted a letter to the U.S. EPA dissenting against the agency regulating greenhouse gas emissions under the Clean Air Act⁹⁸. The recommendations in the report rely on the executive power of the governor's office for implementation. Without a sympathetic ear to environmental issues, the above measures will be difficult to pursue. This puts more pressure on the upcoming governor's race. While there is not an official opposing gubernatorial candidate, Senator Kay Bailey Hutchison is regarded as a probable opponent⁹⁹. Senator Hutchison's entrance into the race would intensify the political debate. Governor Perry has traditionally represented the conservative business community, including his view against carbon regulation. But with Texas such a large carbon dioxide emitter, many prominent corporations are switching stances. Companies such as Energy Future Holdings Corp. have endorsed a federal cap-and-trade system and are encouraging the state to take an active role in defining the federal policy¹⁰⁰. In a heated governor race, the issue of sustainable economic growth could prove to be a resounding issue.

⁹⁸ Russell Gold. "Perry: Carbon Caps 'Disastrous' for Texas", *The Wall Street Journal*, 12 Dec 2008, sec A, p. 4.

⁹⁹ Paul Burka. "The Thrilla in Vanilla," *Texas Monthly*, February 2009.

¹⁰⁰ Russell Gold. "Perry: Carbon Caps 'Disastrous' for Texas", *The Wall Street Journal*, 12 Dec 2008, sec A, p. 4.

(VII) Appendices

*Appendix A. Pennsylvania Timeline*¹⁰¹

- 1979 ~ Three Mile Island Nuclear Generation Station has partial core meltdown in Dauphin County, PA
- 1992 ~ *Alternate Fuels Incentive Grant* program (AFIG) established in **Act 166**
- 1999 ~ *Growing Greener* enacted to address environmental issues from abandoned mining sites and overall water quality within the state
- 2002 ~ Township of Porter, PA enacts “*Porter’s Elimination of Corporate Personhood*” ordinance
- 2003 ~ Edward G. Rendell elected as Pennsylvania’s 45th Governor
~ Kathleen McGinty appointed as Seceretary of Department of Environmental Protection (DEP)
~ **Office of Community Revitalization and Local Government Support** (OCRLGS) established within Pennsylvania DEP
- 2004 ~ *Economic Development Committee* (**Executive Order 2004-9**): established to focus on business development and conservation of natural resources
~ AFIG program expands to *Biodiesel* and *Ethanol* programs (**Act 178**)
~ *Small Business Advantage Program* created
~ *Alternative Energy Portfolio Standard Act* – 18% in 15 yrs (2019)
~ **Pennsylvania Energy Development Authority** (PEDA) – begins financing clean energy projects under Governor Rendell’s direction
- 2005 ~ *Going Greener II* (**Act 45**): \$625 million bond approved by PA citizens
~ The *Keystone Principles for Growth, Investment and Resource Conservation* adopted by Economic Development Committee
~ The *Keystone Green Investment Strategy* implemented in **Pennsylvania Treasury**
~ The *Keystone Green Fund* starts cleantech investment with initial appropriation of \$40 million
~ The **Pennsylvania Treasury** joins the Investor’s Network for Climate Risk (INCR) as a General Member
- 2006 ~ Pennsylvania invests \$6.4 mil in cleantech and stimulates \$38 million in private investment
- 2008 ~ The **Commonwealth of Pennsylvania’s** operation budget \$62 billion
~ *Small Business Advantage Grants* – 50% match for efficiency upgrades
~ **PEDA** awards \$6.4 million to clean energy projects
~ *Alternative Energy Investment Fund*: \$665.9 million approved for efficiency and alternative energy projects

¹⁰¹ Refer to Case Study, *The Keystone State*, for sources

*Appendix B. Texas Timeline*¹⁰²

- 1999 ~ *Renewable Portfolio Standard (RPS)* enacted in **Senate Bill 7**
- 2000 ~ Rick Perry inaugurated as 47th Governor of Texas
- 2003 ~ **Economic Development Bank** redefined in Texas Executive Branch
~ *Texas Enterprise Fund*: \$295 million appropriated in 2003 and an additional \$180 million in 2005
~ *Industry Cluster Initiative* established, targeting six industries (**Senate Bill 275**)
- 2005 ~ *Renewable Portfolio Standard (RPS)* increase in **Senate Bill 20**: Mandated new renewable energy targets, including non-wind sources
~ *Emerging Technology Fund (House Bill 1188)* appropriated \$200 million
- 2006 ~ GreenChoice, Austin Energy: Ranked largest supplier of green energy with 16% of green utility sales nationwide
- 2007 ~ *The Governor's Competitiveness Council* formed
~ **Texas Workforce Commission** announces \$1.2 million in grant recipients for Energy Sector, targeting renewable resources
~ Austin, Texas ranked #1 "*Cleantech Incubation Cluster*"
- 2008 ~ The State of Texas Legislative Budget for 2008-09 totals \$168 billion, with approximately \$20 billion for business and economic development programs
~ Texas home to more *Fortune 500* companies than any other state
~ Texas ranked No. 1 U.S. state economy by *Financial Times*
~ Texas is top exporter in U.S. with \$192 billion exported, 7th consecutive year
- 2009 ~ *Texas Renewable Portfolio Standard* estimated to avoid 3.3 million tons of CO₂ emissions annually
~ State Senator Rodney Ellis introduces an "environmental package" of legislation, including a Texas cap and trade system and several tax incentives for green initiatives

¹⁰² Refer to Case Study, *The Lone Star State*, for sources

Appendix C. Pennsylvania Keystone Principles

COMMONWEALTH OF PENNSYLVANIA KEYSTONE PRINCIPLES
FOR GROWTH, INVESTMENT & RESOURCE CONSERVATION

PREAMBLE

The Keystone Principles & Criteria for Growth, Investment & Resource Conservation were adopted by the Economic Development Cabinet May 31, 2005. They were developed by the Interagency Land Use Team, a working group of the Cabinet over two years. The Principles & Criteria are designed as a coordinated interagency approach to fostering sustainable economic development and conservation of resources through the state's investments in Pennsylvania's diverse communities.

The Principles lay out general goals and objectives for economic development and resource conservation agreed upon among the agencies and programs that participated in their development. The Criteria are designed to help measure the extent to which particular projects accomplish these goals.

The Criteria do not replace agency program guidelines or criteria. Rather, at each agency's discretion, they will either be integrated into existing program criteria (preferable) or used as additional, favorable considerations in the scoring or decision-making process. The Principles and Criteria are designed to encourage multifaceted project development that will integrate programs and funding sources from a variety of state agencies into a comprehensive strategy to address issues affecting whole communities. There are two categories of criteria:

Core Criteria, where relevant, should be given primary consideration in all investment decisions made by Commonwealth agencies when making grants or loans to public or private projects using agency funds.

Preferential Criteria should be used by Commonwealth agencies in all programs to which they are applicable to evaluate projects and make decisions on grants or loans using agency funds.

Projects are to be evaluated with the recognition that rural, suburban, and urban areas have different characteristics and needs, and that what might work in an urban area might not work in a rural area (the "Be Fair" standard).

The Cabinet also approved a process to implement the Principles and Criteria over the next six months during which each agency will determine how they will integrate the criteria into each of their programs. A committee of the Interagency Team, led by the Governor's Office, will review the plans and offer feedback with the goal of fine tuning the use of the Principles and Criteria for full implementation in the next calendar year.

COMMONWEALTH OF PENNSYLVANIA KEYSTONE PRINCIPLES FOR GROWTH, INVESTMENT & RESOURCE CONSERVATION

PRINCIPLES

- 1. REDEVELOP FIRST.** Support revitalization of Pennsylvania’s many cities and towns. Give funding preference to reuse and redevelopment of “brownfield” and previously developed sites in urban, suburban, and rural communities for economic activity that creates jobs, housing, mixed use development, and recreational assets. Conserve Pennsylvania’s exceptional heritage resources. Support rehabilitation of historic buildings and neighborhoods for compatible contemporary uses.
- 2. PROVIDE EFFICIENT INFRASTRUCTURE.** Fix it first: use and improve existing infrastructure. Make highway and public transportation investments that use context sensitive design to improve existing developed areas and attract residents and visitors to these places. Provide transportation choice and intermodal connections for air travel, driving, public transit, bicycling and walking. Increase rail freight. Provide public water and sewer service for dense development in designated growth areas. Use on-lot and community systems in rural areas. Require private and public expansions of service to be consistent with approved comprehensive plans and consistent implementing ordinances.
- 3. CONCENTRATE DEVELOPMENT.** Support infill and “greenfield” development that is compact, conserves land, and is integrated with existing or planned transportation, water and sewer services, and schools. Foster creation of well-designed developments and walkable, bikeable neighborhoods that offer healthy life style opportunities for Pennsylvania residents. Recognize the importance of projects that can document measurable impacts and are deemed “most-ready” to move to successful completion.
- 4. INCREASE JOB OPPORTUNITIES.** Retain and attract a diverse, educated workforce through the quality of economic opportunity and quality of life offered in Pennsylvania’s varied communities. Integrate educational and job training opportunities for workers of all ages with the workforce needs of businesses. Invest in businesses that offer good paying, high quality jobs, and that are located near existing or planned water & sewer infrastructure, housing, existing workforce, and transportation access (highway or transit).
- 5. FOSTER SUSTAINABLE BUSINESSES.** Strengthen natural resource based businesses that use sustainable practices in energy production and use, agriculture, forestry, fisheries, recreation and tourism. Increase our supply of renewable energy. Reduce consumption of water, energy and materials to reduce foreign energy dependence and address climate change. Lead by example: support conservation strategies, clean power and innovative industries. Construct and promote green buildings and infrastructure that use land, energy, water and materials efficiently. Support economic development that increases or replenishes knowledge-based employment, or builds on existing industry clusters.

6. RESTORE AND ENHANCE THE ENVIRONMENT. Maintain and expand our land, air and water protection and conservation programs. Conserve and restore environmentally sensitive lands and natural areas for ecological health, biodiversity and wildlife habitat. Promote development that respects and enhances the state's natural lands and resources.

7. ENHANCE RECREATIONAL AND HERITAGE RESOURCES. Maintain and improve recreational and heritage assets and infrastructure throughout the Commonwealth, including parks & forests, greenways & trails, heritage parks, historic sites & resources, fishing and boating areas and game lands offering recreational and cultural opportunities to Pennsylvanians and visitors.

8. EXPAND HOUSING OPPORTUNITIES. Support the construction and rehabilitation of housing of all types to meet the needs of people of all incomes and abilities. Support local projects that are based on a comprehensive vision or plan, have significant potential impact (e.g., increased tax base, private investment), and demonstrate local capacity, technical ability and leadership to implement the project. Coordinate the provision of housing with the location of jobs, public transit, services, schools and other existing infrastructure. Foster the development of housing, home partnerships, and rental housing opportunities that are compatible with county and local plans and community character.

9. PLAN REGIONALLY; IMPLEMENT LOCALLY. Support multi-municipal, county and local government planning and implementation that has broad public input and support and is consistent with these principles. Provide education, training, technical assistance, and funding for such planning and for transportation, infrastructure, economic development, housing, mixed use and conservation projects that implement such plans.

10. BE FAIR. Support equitable sharing of the benefits and burdens of development. Provide technical and strategic support for inclusive community planning to ensure social, economic, and environmental goals are met. Ensure that in applying the principles and criteria, fair consideration is given to rural projects that may have less existing infrastructure, workforce, and jobs than urban and suburban areas, but that offer sustainable development benefits to a defined rural community.

CRITERIA FOR GROWTH, INVESTMENT & RESOURCE CONSERVATION
IMPLEMENTING THE KEYSTONE PRINCIPLES

I. Core Criteria

1. Project avoids or mitigates high hazard locations (e.g., floodplain, subsidence or landslide prone areas).
2. Project/infrastructure does not adversely impact environmentally sensitive areas, productive agricultural lands, or significant historic resources.
3. Project in suburban or rural area: Project and supporting infrastructure are consistent with multi-municipal or county & local comprehensive plans and implementing ordinances, and there is local public/private capacity, technical ability, and leadership to implement project.
4. Project in “core community” (city, borough or developed area of township): Project is supported by local comprehensive vision & plan, and there is local public/private capacity, technical ability, and leadership to implement project.
5. Project supports other state investments and community partnerships.

II. Preferential Criteria

1. Development/Site Location

- 1a. Brownfield or previously developed site.
- 1b. Rehabilitation or reuse of existing buildings (including schools and historic buildings).
- 1c. Infill in or around city, borough, or developed area of township.
- 1d. If greenfield site, located in or adjacent to developed area with infrastructure.
- 1e. Located in distressed city, borough or township.

2. Efficient Infrastructure

- 2a. Use of existing highway capacity &/or public transit access available.
- 2b. Within 1/2 mile of existing or planned public transit access (rail, bus, shared ride or welfare to work services).
- 2c. Use of context sensitive design for transportation improvements.
- 2d. Use/improvement of existing public or private water & sewer capacity and services.

3. Density, design, and diversity of uses.

- 3a. Mixed residential, commercial & institutional uses within development or area adjacent by walking.
- 3b. Sidewalks, street trees, connected walkways & bikeways, greenways, parks, or open space amenities included or nearby.
- 3c. Interconnected project streets connected to public streets.
- 3d. Design of new water, sewer & storm water facilities follows Best Management Practices, including emphasizing groundwater recharge & infiltration, and use of permeable surfaces for parking and community areas.

4. Expand Housing Opportunities

- 4a. Adopted county and multi-municipal or local municipal plans include plan for affordable housing; and implementing zoning provides for such housing through measures such as inclusion of affordable housing in developments over a certain number of units (e.g., 50), provision for accessory units, and zoning by right for multifamily units.
- 4b. Project provides affordable housing located near jobs (extra weight for employer assisted housing).
- 4c. Project adds to supply of affordable rental housing in areas of demonstrated need.

5. Increase Job Opportunities

- 5a. Number of permanent jobs created and impact on local labor market.
- 5b. Number of temporary jobs created and impact on local labor market.
- 5c. Number of jobs paying family sustaining wages.
- 5d. Increased job training coordinated with business needs & locations.

6. Foster Sustainable Businesses

- 6a. Sustainable natural resource industry improvement or expansion: agriculture, forestry, recreation (fisheries, game lands, boating), tourism.
- 6b. Business or project is energy efficient; uses energy conservation standards; produces, sells or uses renewable energy; expands energy recovery; promotes innovation in energy production and use; or expands renewable energy sources, clean power, or use of Pennsylvania resources to produce such energy.
- 6c. Project meets green building standards.
- 6d. Project supports identified regional industry cluster(s).

7. Restore/Enhance Environment

- 7a. Cleans up/ reclaims polluted lands and/or waters.
- 7b. Protects environmentally sensitive lands for health, habitat, and biodiversity through acquisition, conservation easements, planning and zoning, or other conservation measures.
- 7c. Development incorporates natural resource features and protection of wetlands, surface & groundwater resources, and air quality.

8. Enhance Recreational/Heritage Resources

- 8a. Improves parks, forests, heritage parks, greenways, trails, fisheries, boating areas, game lands and/or infrastructure to increase recreational potential for residents & visitors.
- 8b. Historic, cultural, greenways and/or opens space resources incorporated in municipal plans and project plan.
- 8c. Makes adaptive reuse of significant architectural or historic resources or buildings.

9. Plan regionally; Implement Locally

- 9a. Consistent county and multi-municipal plan (or county and local municipal plan) adopted and implemented by county and local governments with consistent ordinances.
- 9b. County or multi-municipal plan addresses regional issues and needs to achieve

participating municipalities' economic, social, and environmental goals. All plans (county, multi-municipal, and local) follow standards for good planning, including:

1. *Is up-to-date.*
 2. *Plans for designated growth and rural resource areas, and developments of regional impact.*
 3. *Plans for infrastructure, community facilities, and services, including transportation, water & sewer, storm water, schools.*
 4. *Plans for tax base and fair share needs for housing, commercial, institutional, & industrial development.*
 5. *Identification of high hazard areas where development is to be avoided.*
 6. *Identification of and plans for prime agricultural land, natural areas, historic resources, and appropriate mineral resource areas to be conserved.*
 7. *Open space plan for parks, greenways, important natural & scenic areas and connected recreational resources.*
- 9c. County and local ordinances implement the governing plans and use innovative techniques, such as mixed use zoning districts, allowable densities of 6 or more units per acre in growth areas, and/or clustered development by right, transfer of development rights, Specific Plans, and tax and revenue sharing.

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