



A Sustainable Future for Tennessee

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This isn't your typical political document.

But I guess I'm not your typical political candidate.

I spent thirty years in the finance and investment industry, of which 20 were in a business that we grew from a little company into a much bigger company. Our focus was helping small firms grow and helping small companies with unique approaches to gain permanent financing and recognition so they could create jobs and new approaches to industry and business. At the same time we helped cities, municipalities, utility districts, hospitals and counties gain financing so they could continue to modernize facilities and improve their financing capability. We built our company into one of the leading investment management innovators in the country.

But, eventually, we decided that the markets had changed. The era of the celebrity CEO and conceptual revenue streams from Internet ventures had led to over-purchasing in the stock market and unsustainable valuations. All this "irrational exuberance" overlooked the fact that several "choke points" existed in this imagined limitless flow of future profits – specifically, the *limited* nature of natural resources.

The Real Underlying Economic Challenge

It is now widely recognized that we have become far too dependent upon carbon-based fuels whose sources are limited and, on top of that, are destructive of the rest of the environment. It is less well recognized how closely connected our food supply has become to our *fuel* supply. In 1940, the US produced 2.3 calories of food energy for every 1 calorie of fossil fuel energy used to produce those calories; by 2007, the US produced 1 calorie of food energy for every 10 calories of fossil fuel energy, signifying deteriorating whole food quality with huge increases in carbon emissions, partly from transport, the ranking of agribusiness as the second largest contributor to green house gas emissions after cars (due to the heavy use of petrochemicals in fertilizer).¹ Agribusiness is also the most water-intensive sector of the US economy, making it dependent upon another increasingly-limited natural resource.²

Limitless financing based on over-optimistically ignoring the true nature of these natural constraints led to over-leveraging that only multiplied whatever dislocation would occur when the underlying asset prices rose to reflect reality. At some point, there would have to be a reckoning at which everything in the economy was re-priced to its real levels, due to fuel and food prices rising to levels more reflective of their finite supply levels, and the cost of finance eventually reflecting the true underlying economic values.

And so, in 1998, we decided to close down our investment funds because we knew that, eventually, these debt issues would catch up with all of us, and we could not continue to encourage investors to put their money into this financial house of cards. A decade later, we were proved correct; everyone now *knows* what we foresaw back then.

This isn't about patting myself on the back for being right in the past – I don't take any comfort in what has happened to our financial system. What it *is* about is recognizing that these

changes are important and permanent: The current recession will end, but no-one projects us returning, even after many years, to the economic levels we were enjoying even a year ago. That is because those levels were unsustainable, and they cannot be achieved again by simply returning to the same patterns. Fossil fuels will never be cheap again. Food prices are rising globally – driven in part by the flight from carbon-based fuels. And finance is unlikely to make up nearly 50% of our economy again any time soon.

We need to recognize the real underlying problems – and construct new patterns of economic growth that allow us to thrive within these new realities.

Thriving in a World of New Realities

After the eventual recovery from the recent financial melt-down, we're facing a profoundly different world. The roots of the current crisis go very deep, to the fundamentals of what has been driving our economy: This downturn isn't just a cyclical drop that will be met on the reverse side with an equal and opposite turn upward – it's the result of long-term underlying changes in our world. Meaningful "recovery" will mean adjusting to these changed realities. Basically, we reached a point where the forces driving our economy cannot be sustained in the same way we were proceeding before. Those who will succeed in this new, post-deluvian world will be those who adapt and develop new models for economic growth.

In the massive write-down in American's perceived wealth that we recently experienced, the sum value of housing, commercial real estate, stocks and other assets fell by nearly half of its original \$50 trillion. Meanwhile, our massive borrowings as a society still total roughly \$25 trillion in debt – with asset values down by nearly half, we need to cut that load by roughly \$15-\$20 million just to bring us within historical debt-to-equity ratios and thus a realistic ability to support all that we've bought. The costs of the various recent bailouts are a drop in the bucket compared to this much bigger challenge.

Meanwhile, demographics are working against us. With the Baby Boom generation, which crested in 1957, just starting its golden years, the United States is now two years into what will be a multi-decade age-realignment. Flagging auto sales and floundering housing starts are not due entirely to the current recession, but to the fact that we are two years into a thirty-year process of changing the economic assumptions on which our economy has been based. For example, the Metropolitan Institute at Virginia Tech predicts that by 2025 there will be 22 million large-lot homes (this on 1/6th acre or more) in the United States – but they are unlikely to have 22 million buyers. We are moving from a consumer-driven economy to an investment-driven economy. The value of most assets upon which we have built our economic expectations – from houses to 401(k) accounts – will prove ephemeral. Real wealth, in contrast to perceived wealth, increasingly will be comprised of the basic ingredients for *generating* this wealth, such as the stock of educated workers and modern plants: How we are trained, how we reshape our careers, how we regenerate the economy, and how we derive savings and financial capital from this *human* capital will be the new assets when the old economic-drivers grow stagnant and decline.

Some very fundamental economic changes have occurred, and they call for a completely different vision of sustainable economic growth if we want to produce better jobs for the future, better schools to provide us access to those jobs, and affordable health care to keep our people productive and provide for them in their expanding old age.

The easiest way to think about these changes is to look at the economy as a great engine. Every engine needs fuel to run. All of the great machines that mankind has constructed to create ever-expanding levels of wealth – from the steamboat, to the locomotive, to the automobile, to the manufacturing plant, to the PC and the current server farms – all depend upon meeting an ever-expanding demand for energy, mostly in the form of fossil fuels. But the main engines of our economy – those that interest us most, people – require energy, too, in the form of food, and over the last few generations our human food supply has become vitally and unnaturally interconnected with our machine-driven energy economy. Since fuel and food are both natural resources, they are subject to some basic constraints independent of our demand for them – and it is this imbalance between the natural supply of food and fuel, on the one hand, and the demand for them, on the other, that set up an unsustainable tension in our financial system, which powers our entire modern-day economy.

A Sustainable Economy

We need to construct an industrial economy based on sustainable fuels, we need to construct a consumer economy based on sustainable food agriculture, and we need to construct a 21st Century services economy based on sustainable financial practices. The fuel, food and financial models we have been living off in recent decades are inter-connected and ultimately all are proving unsustainable. The industrial, agricultural and services economies of the 21st Centuries depend upon learning these lessons and constructing new, sustainable models. The nations and states that recognize this, learn these lessons, and build new, competitive economies based on these concepts will succeed; those that do not will fail. It's that simple. And the current worldwide recession demonstrates that.

I know this from my own experience in business. We competed best when we went up against the big New York-based companies like Goldman Sachs and Merrill Lynch. We found our opportunities where we could do things better and smarter with fewer risks. And when we couldn't, then we knew we had to change what we were doing. You know, if you keep doing the same things over and over with no success, then you change what you are doing. We ran our business to survive the tough times and those were the times we made our very best decisions. We now need to do something similar – as a society, as a nation, and as a state. We can't keep doing the same things as before.

And that's why, over a decade ago, I decided to get out of traditional investing – because I saw the direction we were headed as unsustainable.

Instead, I decided to devote myself to making *all* of our activities *more* sustainable.

And I started with my own life.

Not only did I advise all my former clients to get their funds out of what I saw as an increasingly unstable international financial system that more and more resembled a pyramid scheme, I also downsized my family house and shifted our personal resources into making our consumption more energy efficient and environmentally sustainable. I have placed an emphasis on healthy eating and a healthy, more natural lifestyle.

Some may see these concerns as unrelated and peripheral to the challenges we face today as a society. Obviously, that makes me different than most to aspire to political office. But so does my career and my record: People who have followed my advice have benefitted financially and avoided the worst of this downturn. My business, my family, and I have all consistently been ahead of the direction that it is now clear to most that we're headed in as a society: I think I know something about creating wealth and personal well-being that's *sustainable*. I've done it for myself, I've done it for my family, and I've done it for others.

Now, I want to do it for our state.

I want Tennessee to be one of the places that succeeds. I believe that we have the building blocks to be that kind of place. I believe that we can build a successful, sustainable, 21st Century Economy here in Tennessee because we have the needed underlying components – but we need more. We must become a center of sustainable energy. We must become home to sustainable agriculture. And we must build our communities and our state, their economies and governance, on sustainable financial practices.

With that kind of economy in place, we can create the jobs we want and will need in the future, and that will enable us to make the investments in *people* – through schools and better health care – that ultimately will power the economy of the 21st Century.

And I have a plan for doing just that.

Step One: Building a Sustainable Industrial Base

Our current economic turmoil is more than just another recession. It will recalibrate everything that we know in terms of how economies work and what drives them. But despite the turmoil and economic uncertainty, we also face some of the greatest opportunities in our lifetime if we recognize them for what they are and know what to do.

This is especially true when it comes to what Tennessee does with its energy policies and programs. This election is going to determine not where we're going over the next four or eight years, but where we're going over the next one hundred years, because we have entered a new age.

The emerging "green economy" is more than just a response to the energy and environmental challenges that we face. Fundamentally, the changes that are taking place are being driven less by environmental concerns, although those are indeed real, and more businesses and governments being challenged by the new economic realities and taking a hard look at their vulnerabilities. They are being forced to confront the fact that we are going from believing we live in a world of infinite resources to recognizing we actually live in one with finite resources. They are confronting the reality that we no longer can afford to waste anything.

Some see this recognition as somehow an admission of failure – I see recognizing reality and planning for how to deal with it as the first step in success.

In fact, clean energy and green industries have become leading economic growth sectors – and are likely to be even more so in coming decades. Some companies, like Wal-Mart, are saving literally millions of dollars by investing in energy efficiency and using renewable energy in their stores, while other companies are creating whole new business models based on the idea of saving energy. For example, a company named EnerNOC is transforming how companies and utilities across the country use energy by helping companies save energy, aggregating those energy efficiency savings, and essentially selling that reduction in energy consumption to utilities and grid operators to help them manage peak electricity loads. As a major report by the Pew Charitable Trusts recently concluded, "Growing attention and financial support from both the private and public sectors indicate that the clean energy economy is poised to expand significantly. Signaling interest in new market opportunities, venture capital investment in clean technology crossed the \$1 billion threshold in 2005 and continued to grow substantially, totaling about \$12.6 billion during the past three years. Although they have dropped significantly in recent months because of the recession, investments in clean technology are actually faring better than other industries: They were down 48 percent in the first three months of 2009 compared with a year earlier, while total venture capital across all sectors was down 61 percent for the same period."³

These are not part of some sort of environmentalist response: They are a response driven by economic need and basic business interests – just like my analysis for the last decade.

Become a Center of Clean Industries

The emerging clean energy economy poses numerous opportunities for Tennessee to build a new sustainable industrial base.

These clean technologies represent some of the greatest potential growth areas for the next several decades – and one of the keys to economic success is to have plenty of jobs in industries that are expanding, not contracting. Not only are these high *growth* industries – they tend to be high *wage* industries, as well. And that's because clean jobs do not just mean service-industry jobs but also good old-fashioned *manufacturing* jobs that require skilled workmanship and provide good pay and career ladders. Everything from wind turbines to photovoltaic panels to biofuel production facilities will need to be built and operated, providing the kinds of industrial jobs on which America built its economic might – but which, in this New Economy, will be clean and sustainable, as well. As a result, these industries will provide both economic gain and a higher quality of life not just for our planet as a whole, but for places – hopefully, including Tennessee – that become their centers.

Fortunately, good things are starting to happen in this area in Tennessee. Our challenge is to continue and expand that long-overdue progress:

- **We must build upon new and existing solar manufacturing facilities to create a solar manufacturing cluster.** So many exciting developments are happening in Tennessee around solar energy.
 - Earlier this year, Governor Bredesen announced his intent to spend \$62 million in federal stimulus money on solar power and research. Half of this would be spent to develop a 5 megawatt solar farm in Haywood County. Proceeds from the sale of any solar power produced there would be re-invested back in the solar farm to build out its generating capacity – something I support.
 - The other half would support the new Tennessee Solar Institute, which will work with Oak Ridge National Lab and the University of Tennessee at Knoxville on solar research and development initiatives.
 - Perhaps even more exciting, Tennessee soon will be home to two \$1 billion solar manufacturing plants. The \$1.2 billion Hemlock Semiconductor plant is already under construction in Clarksville, while Wacker Chemie AG is building a \$1 billion polysilicon plant in Bradley County.
 - The U.S. Department of Energy and the National Association of Regulatory Utility Commissioners recently selected Tennessee as one of six national sites that will study the benefits and barriers to solar energy development.

We need to continue this momentum: We must make it a top priority to pitch Tennessee to solar manufacturers throughout the country and world. We must seek out ways to attract and recruit additional solar companies and funding. We must identify land and buildings suitable for future development and use for solar manufacturing. And we must develop workforce training programs to suit their needs.

- **We must continue to support and build upon our growing biofuels industry.** Tennessee's biofuels program is another example of how the strategic use of state funding and resources can attract additional funding, companies, and workers, and help to build out a cluster in an important and emerging industry. Two years ago, the

state invested upwards of \$70 million to develop switchgrass as a fuel source for the production of ethanol. Some of that money was used to bring researchers and businesses to Oak Ridge and the University of Tennessee. Some of it helped the Agricultural Extension Program to recruit farmers to plant switchgrass. Some of it helped fund the development of a pilot biorefinery in Vonore. Still other funding helped support the Bioenergy Science Center at Oak Ridge. All of these efforts, in turn, helped attract nearly \$200 million in federal funding through 2012, and hopefully will continue to attract funding and partners beyond then.

In addition to becoming a biofuel research and development powerhouse, Tennessee is home to numerous ethanol and biodiesel companies. Tennessee now ranks 12th in the nation in ethanol production, with a production capacity of 267 million gallons and another 38 million gallons of capacity under construction or development. We have another seven biodiesel plants spread throughout the state, from Memphis to Surgoinsville, with a total production capacity of about 90 million gallons.

By maintaining strong incentives, loans, and infrastructure grants, Tennessee can continue to attract biofuel companies. The state could further support these businesses by adopting the policies I will describe below to create demand for these products.

As Tennessee continues to develop into a clean energy powerhouse, we ought to be mindful of other clean technology opportunities that also should be pursued with vigor. For example:

- **Recycling technology.** Like many people in the state, I was disappointed when the Legislature wasn't able to push through the proposed bottle bill. To me, it was the ultimate win-win – an expected eight-fold increase in our container recycling rates, a decline in roadside litter, an increase in opportunities to fund litter education, prison litter crews, and even non-profits interested in raising funds by collecting and redeeming bottles, and less garbage flowing into our landfills, among other benefits. Another important benefit would be the possibility of stimulating the growth of new recycling-related businesses and technologies, from simple redemption centers to advanced sorting systems.
- **Industries that build new things from recycled materials.** Another benefit from the bottle bill would have been the ways in which all of this new feedstock – plastics and glass in particular – could be used by companies that manufacture products out of recycled materials. A remarkable array of products now is being manufactured from components made in whole or part from recycled content materials – from building materials, furniture, carpets, and fiberglass to packaging to print materials.
- **Pollution-control and clean-up technologies.** As the U.S. Congress works to enact policies that place caps on greenhouse gas emissions and enhance environmental standards, there will be a growing market for pollution-control and clean-up technologies. The Tennessee Valley Authority alone is in the midst of a \$5.8 billion effort to reduce emissions at its coal-fired power plants, while the U.S. Department of Energy has awarded more than three-quarters of a billion dollars to Tennessee to help with uranium cleanup and other environmental mitigation projects at the Oak Ridge National Laboratory.⁴ There will be a growing need for businesses

that work in these areas, along with businesses working to develop carbon sequestration technologies and operations.

- **Energy demand-reduction technologies.** Energy efficiency is getting to be big business. For example, a number of companies have sprung up around the country in recent years to aggregate demand reduction and “sell” reduced demand to utilities. And of course there are now hundreds, if not thousands, of businesses that are developing, manufacturing, and selling products that seek to reduce energy consumption, or are more efficient versions of existing equipment. From smart meters and programmable thermostats to better insulation and lighting products, this field is going to explode during the next decade.

Tennessee can support these and other emerging industries by demonstrating leadership in clean energy and clean technologies, and by setting the right business tone. As a businessman, I know the kinds of things that businesses look for in a potential new location – availability of a trained and educated workforce, smart and supportive policies, favorable tax climate, and livable communities, among other factors, and I will work tirelessly to improve Tennessee’s offerings in all of these areas. By enacting policies that contribute to this approach, Tennessee can become an economic and environmental powerhouse in the emerging clean energy economy. To do that, we should:

- **Build upon existing in-state assets like Oak Ridge National Lab and our research universities to attract clean tech R&D and manufacturing companies.** In the 21st Century economy, industries develop around natural clusters – locations where companies, research institutions, and universities come together, develop expertise in a given area, and attract skilled workers and funding. We are blessed in Tennessee to have the Oak Ridge National Laboratory, which attracts significant federal funding in a number of important clean energy areas like biofuels and solar power. We must continue the kinds of policies that the Bredesen Administration has pursued to build upon ORNL’s strengths, as well as investments already made at the University of Tennessee, to attract and retain funding, workers, and clean energy businesses.
- **Offer tax incentives to attract clean energy manufacturing companies to Tennessee.** To further entice clean energy manufacturers to Tennessee, the state should look into the development of useful incentives, such as:
 - Incentives for manufacturers that wish to develop or expand facilities to make products associated with clean electricity generation, more efficient use of electricity, or grid-connected electricity storage.
 - Grants and loan guarantees to encourage wind and solar manufacturers to relocate to Tennessee. Funds may be used for project costs, including land or building acquisition, purchase of rights-of-way, and easements necessary for project construction, clearing and preparation of land to build an eligible project, construction or renovation of a building to manufacture wind or solar components and systems, and equipment purchases for the manufacture of wind or solar systems.
- **Incentivize the availability of capital, especially for start-ups.** New enterprises need capital to get off the ground and to grow. Other states have adopted a variety

- of programs to help make capital available for targeted growth industries. Tennessee can follow suit by:
- Creating a Tennessee Capital Investment Corporation to invest in venture capital projects agreeing to establish a presence in Tennessee and actively seek investments in Tennessee. The State of Iowa launched a similar effort, the Iowa Fund of Funds, in 2002. Thus far, the Iowa Fund's \$28 million in commitments has attracted six venture funds with over \$570 million in venture investing capacity to the state.⁵
 - Encouraging micro-lending to make capital available to businesses that do not have access to the traditional commercial banking sector. Iowa had a proposal in its last legislative session to provide \$200,000 in technical assistance (TA) grant monies for micro-lenders because the micro-lenders tell them that if they have the TA monies, they can raise the capital.
 - Establishing a Capital Access Partnership that encourages banks to make loans available to small businesses, for startup and working capital lines of credit. CAPs are a statewide public-private loan program designed to simplify borrowing for business owners. Funds are committed by the State to provide cash collateral assurance to banks making loans to companies that might otherwise not be credit worthy. Under Capital Access Programs, the borrower and lender each pay a 2-3% fee into a pooled loan reserve account, which is then matched by the state government; the account protects lenders in case of defaults, which are quite low.
- **Enact a bottle bill to jump-start our recycling industry.** Tennessee could increase recycling rates, generate new businesses, and significantly reduce litter by enacting a bottle bill. Like four out of five Tennesseans, I support legislation that would add a 5-cent deposit on bottles if we created certified, job-creating redemption centers and streamlined the redemption process. The \$5 million this effort would raise annually could fund county litter education and grants programs while enabling the state to eliminate the existing so-called litter taxes on beer and soft drinks. And as I noted earlier, it would stimulate the growth of new recycling-related businesses and technologies, including redemption centers, advanced sorting systems, building materials, furniture, carpets, fiberglass, packaging and print materials.
 - **Prepare our workforce for the green jobs of the 21st Century.** As the Tennessee Department of Labor and Workforce Development recently observed in its report, Investing for Growth in Tennessee Workforce to 2016, "Employment from 2006 to 2016 can be strengthened by emphasis on emerging and revitalized industries, including industries improving energy efficiency."⁶ We need to invest adequately in educating and training the workers needed to grow these industries in the coming years. That means making a significant commitment to an education system second to none:
 - For the foreseeable future, roughly two-thirds of jobs will require *some* level of college education (the vast majority requiring one-year of college or the equivalent). College-going rates therefore need to increase substantially. Higher-paying jobs, of course, will require even more education: In the ten most productive and highest-income states, for example, 33% of the workforce aged 25-to-64 have at least a college degree.
 - Not only do more students need to be college-ready, but also by making it possible for more students to take college-level work while still in high school the

- cost of a college degree – in both time and money – can be lowered, making college more affordable for more (particularly working) families.
- There needs to be increased emphasis on advanced programs, generally. The United States lags behind in math and science achievement. Quality and expectations should be raised across the board, and not just for high-achieving students – kids do better if we expect more of them. Accelerated programs such as dual enrollment, AP classes and early admission are helping students bridge the gap between high school and postsecondary education and encouraging better use of students' time, especially in the upper grades.
 - The fact remains that most students do *not* go on to college, and, even in the new economy, most won't receive four-year degrees. Workforce education for the non-college-bound needs to start in high school, if not before, and needs to be sufficient to take most young people through to some level of post-secondary education or training.
 - The need to learn and the challenge to grow will be just as great on the job as in the classroom in the 21st Century. We must create a demand-driven workforce development system that trains workers for the jobs employers need and gives employers a credential they can trust. Too often, individuals need to access different programs, and each program has different requirements. At the same time businesses face a cumbersome and confusing system that meets the needs of government institutions rather than labor market demands. To more quickly align workforce programs with labor market needs requires demand-driven programs designed to match an individual's career skills with labor market demands, with a heavy emphasis on adaptability and flexibility to meet the needs of a dynamic labor market.
 - The quality of teaching is the single biggest determinant of the quality of education. If states are to attract the best minds to the classroom, they must pay teachers like valued professionals – and *expect* more of teachers, as well, including holding them accountable for student performance and providing incentives when they succeed.
 - Parents themselves are the most important element in their children's success. More needs to be done to encourage parent involvement – and to help educate and connect parents with low educational levels, themselves.
 - Research indicates that we need to start our kids learning sooner by expanding early childhood education.
 - Parents achieving higher education improve child education outcomes.

These investments in human capital – from cradle to career to cradle – are probably the most important thing we can do to build the economic future we want for Tennessee. I will issue a more detailed plan specifically on our educational and workforce development systems at a later date. Suffice it to say here that I consider this central to our economic future and the most important investment we can make – and the main reason why we must develop a sustainable financial structure for state government in Tennessee, as I discuss below under Step Three, so that we can afford to make these investments in the future.

I'll have more to say about other industries – a sustainable agricultural base and a sustainable financial base, which are *also* clean, sustainable industries – in the remaining parts of this plan. But first let me say something about what sustainable energy practices could mean for Tennessee not just as a generator of new income but also as a source of new savings.

Invest in Sustainable Energy Practices Ourselves

Anyone who lived through the summer of 2008 and \$4-per-gallon gasoline has felt the downside of our addiction to fossil fuels like oil. And anyone who has seen the devastation wreaked by coal companies that use mountain top removal practices, saw the aftermath of the horrific coal ash slide that covered more than 400 acres of Roane County and clogged the Emory River last December, understands the harm that the continued use of fossil fuels to power our nation can cause closer to home in Tennessee: That kind of devastation isn't just environmental – it's economic, as it affects our ability to lure other, higher-paying 21st Century jobs to Tennessee, as well as our ability to maintain our lucrative tourism industry that thrives on Tennessee's great natural beauty.

If Tennessee is going to compete with other states for the kinds of clean energy businesses and industries that are transforming how America uses energy, we need to embrace a smarter vision for the future and demonstrate even greater leadership. The Bredesen Administration has made laudable investments in clean energy to get Tennessee heading in the right direction – I want us to build upon these investments and continue to push the state towards a cleaner, smarter energy future.

Invest heavily in commercial, industrial, and home energy efficiency

When it comes to our homes and businesses, Tennessee's energy consumption is about as inefficient, unsustainable, and unprofitable for our people as it can get. We are largely dependent on out-of-state sources to light our homes and power our economy – and these sources are largely unsustainable. In short, we've lost control of our future. It's time to take it back.

About three-fifths of the electricity produced in Tennessee comes from coal-fired plants, with the rest of our supply coming from hydroelectric and nuclear power.⁷ Most of the coal used to generate our electricity is imported from Kentucky, West Virginia, and other coal-producing states.⁸ In fact, we export more than half of the dollars we spend in Tennessee on energy in order to import fuel sources like coal, uranium, and natural gas; this transfer of wealth out of Tennessee does nothing to enrich our economy, and worse, leaves us at the mercy of forces beyond our control.⁹

Changing this will not be easy. We are further handcuffed by the reality that the federal government, not the state, controls virtually all electricity generation *within* Tennessee through the Tennessee Valley Authority. Thus, many of the kinds of policies that other states have enacted, such as renewable portfolio and energy efficiency standards, are not useful because ultimately, the state realistically will not be able to dictate the extent to which the TVA and out-of-state utilities ought to be investing in renewable energy and energy efficiency.

Nevertheless, we can invest heavily in energy efficiency – and, for the foregoing reasons, we *must*. Tennessee has the highest per capita residential electricity consumption in United States.¹⁰ Why is that? For one thing, we've never really had much reason to conserve. Our energy was provided by the TVA at rates that were lower than the national average, relying on lower cost sources like coal, hydro, and nuclear power. In part because of the availability of

cheap electricity, more than half of Tennessee households use electricity as their primary source of energy for home heating.

Unfortunately, TVA has not pushed energy conservation and efficiency or offered much in the way of incentives to encourage ratepayers to invest in efficiency, as occurs in most other states. Last year, TVA was hoping that its conservation and efficiency programs would reduce power demand by 64 megawatts.¹¹ That almost sounds like a lot, except that TVA's peak power demand has exceeded 34,000 megawatts of electricity.¹² The Southern Alliance for Clean Energy recently compared the impact of state energy efficiency programs and found that leading states in other parts of the country are saving as much as **50 to 100 times** more energy than Tennessee and other southern states.¹³

We can take no pride in using more electricity per person than any other state in the country – or in the most recent state energy efficiency scorecard from the American Council for an Energy Efficient Economy, which ranked Tennessee 46th in the nation.¹⁴ The good news is that there is really nowhere to go but up. We can draw upon the lessons learned elsewhere in the country and use them to cut the amount of energy we use, our energy costs, the capital we export to others to feed our energy appetites, and the impact that that energy generation has on our air, water, and land. And we can do so without having to undergo revolutionary changes.

People and businesses are beginning to understand that using energy wisely is good for their wallet, good for their environment, and good for the country. Last year, for example, Wal-Mart exceeded its goal by selling 137 million energy efficient compact fluorescent light bulbs. That's good for Wal-Mart's bottom line – but good for its customers too, since they will save \$4 billion in utility bills over the life of those bulbs.¹⁵

In the short term, Tennessee can benefit from the federal government's massive investment in energy efficiency programs. The state is due to receive \$99 million to help retrofit the homes of low- and middle-income families to improve their energy efficiency.¹⁶ Our state also is receiving \$62.5 million to fund state energy program initiatives, \$42.2 million in energy efficiency and conservation block grant funds mainly for local initiatives, \$71 million for various science initiatives at Oak Ridge National Laboratory, and \$7 million for biomass projects, among other stimulus funds.¹⁷ We may never see an infusion of federal dollars for these kinds of energy-related programs again, so we must invest them wisely.

But we also must ensure that this is not simply a one-time deal. We need to use these federal dollars as the springboard to a longer-term strategy for investing in efficiency. In this manner, we need to re-think a few things, starting with our homes and commercial buildings and adopt a few basic, common-sense principles moving forward:

- **Every new home and office building should be built to high standards of energy efficiency.** For far too long, we have allowed our homes and commercial buildings to be built without much regard for their energy efficiency. But our homes and buildings actually generate more greenhouse gas emissions than our vehicles do, given the amount of energy that they require throughout their long life cycle. By adopting more stringent energy efficiency building standards, we can and should build better buildings that provide greater comfort, have better value, and save thousands of dollars in energy and water costs over the life of the building than those built to lower standards. Because Tennessee is a "home rule" state, building codes adopted at the state level must be adopted locally before they can be enforced. Last year, the state adopted the 2003 International Energy Conservation Code (IECC)

residential building code.¹⁸ Some jurisdictions, like Chattanooga, have adopted this standard, while others still are using the less-efficient 2000 IECC codes. But a few towns, cities, and counties have gone further and adopted the 2006 IECC. Tennessee should encourage use of the most progressive and newest energy efficiency building codes and practices, and strongly encourage local jurisdictions to follow suit to help homeowners save money and energy throughout the life of their homes. If there is any doubt that such standards do, in fact, save money and energy, California's building and appliance standards have saved more than \$56 billion in electricity and natural gas costs since 1978, and are projected to save an additional \$23 billion by 2013.¹⁹

- **Every new home or office building should incorporate at least one renewable generation technology.** Every home or commercial building is a potential mini-power plant, but we typically don't think to design buildings in a way that maximizes this potential. As the costs of renewable generation continue to decline, though, we are going to reach a point where investing in renewable generation makes a great deal of economic, let alone environmental, sense for many homeowners and business owners. Developers ought to be encouraged to develop homes and buildings with renewable generation in mind. If the structure does not incorporate renewable generation, at the very least it ought to be built in a way that could facilitate renewable generation at a later time. This includes pre-wiring the building for future on-site solar or wind power, ensuring that homes and buildings are built facing south to maximize solar gain, and incorporating renewable technologies such as geothermal heat pumps or solar water heating systems.
- **Encourage energy efficient mortgages or home equity loans.** Most investments in energy efficiency pay for themselves over time through savings on utility bills. Some of these investments, such as new windows, insulation and siding, more efficient furnaces, or renewable energy technologies, can cost more than homeowners can afford at one time. But banks, utilities, and energy service companies (ESCO's) have developed financing products that can spread the costs of those investments over time so that they fit within a family's budget. The state government should negotiate partnerships with interested companies and market these products so that as many Tennessee families and businesses as possible can benefit from them.
- **Encourage TVA to seek out non-hydro renewable energy resources.** TVA finally is making minimal investments in the development of renewable energy, from wind turbines on Buffalo Mountain to 10 small solar facilities to methane gas produced at wastewater treatment plant in Memphis. And its new Green Power Switch Generation Partners program has the potential to increase the number of renewable generation systems that are installed in homes and businesses throughout the state through its generous incentives.²⁰ TVA must continue to develop its renewable resources, such as by offering state buildings as possible sites for further development. For example, the roofs of some state buildings could house large solar arrays, and the state should work with TVA and other renewable energy developers to maximize these opportunities.
- **Create a state energy efficiency "utility" to help consumers invest in efficiency through rebates and other incentives.** It is cheaper to pay for efficiency than to

pay to build a new power plant. The cost of the most common kinds of new electricity generation ranges from about 7.5 cents per kilowatt hour to more than 34 cents per kilowatt hour, while the cost to deliver most kinds of energy efficiency cost between zero to five cents per kWh.²¹ And yet, the TVA continues to push to develop new generation, including new nuclear power that will cost ratepayers billions of dollars and likely require levelized electricity costs of 11 to 15 cents per kWh.²² It would be better if the TVA and the distribution utilities throughout the state adopted a variety of on-going efficiency programs to help consumers use less energy and cut our need to build new power plants. If they are unwilling to do this, however, the state should invest a portion of its federal stimulus funds in establishing a statewide energy efficiency utility that will compete with the utilities by helping consumers and businesses to invest in energy efficiency through outreach, incentives, and programs. Vermont is leading the nation in this regard. Efficiency Vermont has enabled Vermont to become the first state in the country to save more electricity than the state's expected average load growth. This reduces the state's peak electricity load, saving money and increasing the reliability of the grid. In fact, the savings achieved are producing a 65% rate of return in the state's residential sector and a 55% rate of return in the business sector.²³ We can and ought to do that too.

- **Encourage TVA and the federal government to invest heavily in “smart grid” technologies and other strategies to maximize efficiency.** TVA is the largest public utility in the United States, and there is an incredible amount of potential low-hanging efficiency fruit that could be harvested if TVA and the federal government wanted to. We must invest federal stimulus dollars in common sense initiatives that the Obama Administration already is championing. For example, the stimulus bill set aside at least \$4.5 billion for “smart grid” projects. One important key to the development of a smarter electricity grid is the use of advanced electricity meters in homes and businesses. These so-called “smart meters” provide an incredible wealth of information to utilities about energy consumption and system reliability. But they also can empower consumers to take action to reduce their energy use and save money – a recent pilot program in Chattanooga found that Electric Power Board customers saved up to \$48 a month on their electric bill.²⁴ Smart meters can enable consumers to participate in demand response or time-of-use programs, both of which studies have found lead to savings. Other major utilities, like Pacific Gas & Electric and Southern California Edison, are making major investments in deploying millions of smart meters throughout their regions. TVA should too.
- **Encourage use of energy-efficient appliances.** The appliances that we put in our homes and buildings ought to be manufactured and installed with energy efficiency in mind, as well. When we buy appliances like refrigerators, TVs, and computers, we usually focus on the sales price but don't often think about their operational costs over the life of the product. For years, the federal government and many other states have developed energy efficiency standards for a variety of appliances, lighting, and products used in homes and buildings. Not Tennessee. We have never adopted appliance efficiency standards, and manufacturers and retailers have no incentive to sell more efficient products in our state. The state could help consumers save on energy costs simply by adopting more stringent appliance standards, as has been done in at least 12 states. In 2006, the Appliance Standards Awareness Project estimated that if Tennessee adopted efficiency standards for 15 appliances not

covered by federal appliance standards, the state could cut its summer peak electricity load by 235 megawatts and consumers could save \$68 million by 2020.²⁵

The Governor recently issued an Executive Order requiring state agencies to lead by example and purchase only Energy Star-qualified equipment – a good first step. But the state could do more by using some of its stimulus funding to provide rebates on efficient major home appliances like refrigerators, washing machines, air conditioners, and dish washers. By helping consumers pay down the initial costs of these appliances, the state can boost the sales of the most efficient appliances, which will save consumers significant amounts of money on their utility bills throughout the working life of the appliances. If the state coordinated these rebates with manufacturers and retailers of these appliances, it could boost sales further, having the added benefit of stimulating the economy while saving people money.

Cut our consumption of transportation fossil fuels.

After changing the energy consumption in our buildings, the biggest long-term reduction in greenhouse gas emissions we can achieve will come from driving smarter.

For too many years, Tennessee has been yoked to fossil fuels like oil. While greenhouse gas-emitting fossil fuels undoubtedly will continue to fuel our vehicles for years to come, there certainly are things we can do now, starting with reducing how much oil and gasoline we consume, and fortunately, Tennessee is in the position to do so:

- **Convert state vehicles to biodiesel.** Biodiesel is a renewable fuel that is made from home-grown vegetable oils and other sources. It produces far fewer greenhouse gas emissions and toxic air pollutants than traditional vehicle fuels. Biodiesel can be used in most diesel engines without affecting their performance. Tennessee state agencies must work with local governments, transit authorities, and school districts to develop incentives and funding for more public vehicles – from buses to garbage trucks – to run on biodiesel. The Tennessee Department of Transportation already is using biodiesel in many of its vehicles, and other agencies can learn from its experience. Minnesota now uses a B2 biodiesel blend to replace *all* petroleum diesel statewide, something I would like to pursue in Tennessee. This will be good for our air quality, good for our growing biodiesel industry, and help reduce our dependence on foreign oil that much more.
- **State incentives for purchase of hybrids.** Hybrid vehicles typically use an electric motor to assist an internal combustion engine to propel the vehicle, improving overall fuel efficiency. Some of the most fuel efficient vehicles available today, including the Toyota Prius, Honda Civic Hybrid, and Ford Fusion Hybrid, use these dual technologies to achieve 40 miles to the gallon or better. One obvious benefit of this technology is that it doesn't require a change in the fueling infrastructure because these cars still use gasoline – just less of it. In most cases, however, hybrid fuel-saving technologies come with a price premium – sometimes as much as \$3,000 to \$7,000 more than standard vehicles. While JPMorgan has estimated that hybrid vehicles will comprise nearly 20% of all vehicle sales within the next 10 years, currently only a little more than 1% of vehicles sold are hybrids.²⁶ To encourage the sale of fuel-saving hybrid vehicles, the state should sweeten the pot by offering a \$500 tax credit for the purchase of any new hybrid vehicle, and a \$1,000 tax credit towards the purchase of any plug-in electric hybrid vehicle once they become

available during the next year or two. The money that consumers save on gasoline is money that won't be exported to Saudi Arabia and that can be spent instead in Tennessee.

On the other hand, their increased electricity use will only be substituting oil consumption for at-least-as-dirty coal – until we are able to reduce Tennessee's dependence upon coal for electricity generation, as I discussed above. As this makes clear, *all* these components of a sustainable energy future are inter-related, and we must try to move ahead on *all* of them simultaneously.

- **Feebates to encourage purchase of more fuel efficient vehicles.** The idea behind a “feebate” is simple in theory: Within any given vehicle class, the least fuel efficient vehicles are assessed a fee at the time of sale, while the most fuel efficient vehicles receive a rebate. This can be designed to be revenue-neutral so that the amount collected in fees from the sale of inefficient vehicles fund the rebates given to those who purchase more efficient vehicles without an overall increase in taxes. In this manner, a feebate could encourage the sale of more fuel-efficient vehicles and discourage the sale of those that are less efficient. Similarly, it would send another signal to manufacturers to produce vehicles that are more efficient within their classes. Some researchers suggest that feebates could significantly reduce vehicle-related greenhouse gas emissions and produce thousands of dollars of savings for car owners.²⁷
- **Require reformulated gasoline to be sold in Tennessee.** One of the most effective ways to reduce smog and air pollution is by using cleaner-burning gasoline. About 30 percent of the gasoline sold in the United States is reformulated to include up to 10 percent biofuels, which burn more cleanly. Tennessee is not required to use reformulated gasoline to meet federal Clean Air Act emissions. But if the state voluntarily chose to meet federal Clean Air Act emissions standards and used reformulated gasoline, we could reduce smog and air pollution while using less oil. This benefits not only the health and well-being of our citizens but also helps our important tourism industry by ensuring that the places people want to visit – from the Smoky Mountains to the Cumberland Plateau to the Tennessee River Valley – can all be seen and are not shrouded in smog. Last year, Missouri established a similar renewable fuel standard with a 10% ethanol blend requirement.²⁸ In addition to reducing our dependence on oil, doing the same in Tennessee would create a larger market for our booming biofuels industry – another example of how doing *right* environmentally will help us to do *well* economically in the 21st Century.

Step Two: Building a Sustainable Agricultural Base

Before the advent of heavy industry, our economy was based on agriculture – and, in many parts of our state, it still is.

Tennessee has a long and honored farming tradition that is part of our history and is struggling to be a part of our future. The farmers of our past were respected and revered as independent entrepreneurs who possessed extraordinary talents to cope with the vagaries of nature and produce the food that sustained the community. They were able to make a living, produce a desirable quality of life and feed the rest of us through their labor.

In 2007, the most recent year for which we have complete figures, Tennessee agriculture²⁹:

- Exported almost \$800 million in raw agricultural products.
- Generated more than \$2.7 Billion annually in agricultural production.
- Supported 79,000 farms on 11.4 million acres of land – nearly half the land area in the state.
- Included 13 million acres of forests with output of \$15.5 Billion – leading the nation in production of hardwood flooring.
- Employed over 400,000 Tennesseans in farm and forest-related jobs.

Nevertheless, the number of farms in Tennessee has declined by nine percent just since 2002 and nearly three-fourths of those farms had sales of less than \$10,000.³⁰ There are clear and compelling signs that the small farm is threatened. Agricultural production is shifting to larger farms. The U.S. Department of Agriculture notes dramatic reductions in small farms dating back to the 1970's. The most accurate data collection, however, only began in 1989 which still shows changes in moving to large, nonfamily farming. The share of production from nonfamily, large farmers (over \$500,000) accounted for 45 percent of production in 2003 – up from 32 percent in 1989.³¹ The number of large farms grew from 39,700 in 1989 to 66,700 in 2003. At the same time, the share of production on smaller farms (sales under \$250,000) fell from 40 percent in 1989 to 26 percent in 2003.³²

Large farms made up only 10 percent of U.S. farms in 2004, but accounted for 75 percent of production value.³³ Many of these large farms also have shifted to operating under marketing contracts, committing to sell products to specified producers – 64 percent of large farms use contracts to guarantee an outlet for their production.³⁴ This switch allows large producers to control every aspect of farm production and distribution; controlling quality, supplies and sale and reducing competitiveness. Government commodity payments have shifted dramatically to larger farms. By 2003, 85 percent of commodity payments went to households making more than \$75,772 (10 percent went to households making more than \$342,918).³⁵

It is therefore unsurprising that family farmers are struggling to stay afloat. Households on farms with annual sales below \$250,000 must supplement income with off-farm work in order to meet the national average for household incomes.³⁶ Farmers receive only about 20 cents of each dollar spent on food in our country (eighty cents of each dollar spent on food goes for processing, transportation, packaging and marketing) – and half of that small share going to the farmer must cover the goods and services purchased by the farmer in the course of production.

In short, very little of what we pay for our mass-produced food actually trickles down to

the individual farmer. It's hardly surprising, then, that the ranks of the small farmers are thinning, and few are stepping up to replace them; over 30 percent of operators of farms under \$100,000 were at least 65 years old by 2003 (only 13 percent of operators of large farms were that old),³⁷ while the average age of Tennessee's farm operators continued to rise from 56 in 2002 to 57.8 in 2007.³⁸

Why should any of this be a cause for concern? Because small, traditional farms represent many of the features that make *sustainable* economic systems so desirable for the 21st Century. Small farmers, by virtue of keeping land open for planting, preserve green space around cities in the most natural of ways. They are responsible stewards of our land who have a vested interest in their communities, and therefore, a commitment to sustainable farming techniques that protect natural resources and the health of local citizens. Large "factory farms" create an unmanageable amount of waste, for instance; while animal waste can be a tool if produced in sustainable amounts, in factory-farm amounts it becomes a major pollutant. For example, on a factory farm containing 35,000 hogs, over four million pounds of waste are produced each week, and over 200 million pounds each year. This manure is over-applied to fields, which can cause it to run off into surface waters, carrying with it antibiotics and artificial growth hormones, which can affect plants, animals and humans downstream; salt, which can damage soil quality and contributes to erosion; and heavy metals present in animal feed that can actually reduce the soil's fertility. Such large quantities of waste also emit harmful gases and particles such as methane and hydrogen sulfide, which can contribute to global warming and harm the health of those living or working nearby. Runoff from factory farms kills fish, degrades aquatic habitats and threatens drinking water supplies. Additionally, factory farms use tremendous amounts of water, which cuts into our precious supplies of water that are not contaminated.³⁹ When farming is a livelihood, however, farmers take the protection of the environment very seriously and invest in farming techniques like eliminating pesticides, organic growing, water and soil conservation, and composting and recycling.

Family farms play an important role in local economies. Unlike large farms that typically create low-wage laborer jobs, small farms provide viable entrepreneurial opportunities in rural communities which bring with it a commitment to responsible farm ownership. Small farm owners provide jobs to local people who live in the community, send their children to local schools and buy in local markets; they support small businesses by purchasing farming supplies from local suppliers; and they create local and regional markets to sell their products.

In the post-September 11th world, small farms are a significant component of a global economy, as well. Food production and safety are now national security issues forcing countries to develop more domestic venues for food production and distribution so that they are growing as much of their own food as possible. And no national security and economic issue is larger in our world today than reducing our dependence on fossil fuels. Food production in the United States accounts for approximately 17 percent of all fossil fuel use and 20 percent of the total greenhouse gas emissions – even more than transportation.⁴⁰ Sustainable farming could result in a dramatic reduction in fossil fuel use and greenhouse gas emissions. Public policy must be designed to support farmers' efforts to reduce energy consumption.

Sustainable farming can again be a means of making a living and also for achieving a desirable quality of life for farmers, consumers, and all Tennesseans. Sustainable agriculture can, and must, meet the needs of the present without compromising the future.

This is not to say we can do away with large farms – they will continue to be major producers and a vital part of our agricultural system. But we must recognize the unique

challenges of the small farmer and develop policies and programs to support a more diverse size-range of farms. We must create a viable farming system built on principles of sustainability whether large or small.

The solution rests first on the commitment and dedication of family farmers and their continued ability to support themselves as a critical part of a sustainable system. Next, sustainability requires a community response that chooses fresh, local food production over prepared and processed food. As Michael Pollan has written, “We are entering a postindustrial era of food . . . [a]nd the more eaters who vote with their forks for a different kind of food, the more commonplace and accessible such food will become.”⁴¹

Ensure family farmers earning a decent living

It is estimated that 94 percent of U.S. farmers are unable to earn a livelihood from their farm.⁴² We can create new opportunities for farmers to increase earnings from farm labor, rather than needing to supplement income with nonfarm earnings. Recognizing and supporting the benefit small farms represent to the economic viability of communities and the larger society, we can help revitalize Tennessee’s farm sector by:

- **Helping farmers develop direct marketing plans.** Small farmers, like any small business, benefit when they develop business plans to produce and market goods competitively. Small farmers can emphasize a competitive advantage by promoting their “smallness” as a positive aspect of their products. With help to focus marketing plans, small farmers can communicate directly with consumers through such things as farmers markets or direct marketing to local restaurants. To the extent farmers can capture a greater share of consumer spending by tailoring production to niche markets or selling directly to consumers, they will be more economically sustainable.
- **Helping farmers form cooperatives for marketing** and adding value to raw commodities. Cooperatives, if structured correctly, can help farmers capture a greater share of the value of a product – keeping more money in local and regional economies rather than exporting raw commodities to larger processors. Cooperatives should be structured to support opportunities for greater market competition, not simply greater concentration. As farmers control more of the entire production and market process, they can expand their share of local markets and make farming profitable for the small farmer.
- **Helping farmers with succession planning by developing new programs that match new farmers with those retiring** who have no successors interested in continuing the family farm.
- **Expanding intern programs** to provide help to small farmers and also give students direct agricultural education and experience.
- **Requiring our land-grant institutions to make supporting small farms a priority.** These institutions can provide a wide range of support to small farmers to help them to improve farm profitability. Research and new technologies have played a significant role to increase yields and reduce costs throughout the agricultural system. Many of these advances can be targeted to help small farmers who could

benefit greatly from having site-specific information to increase yields, and therefore, improve economic performance. We can make new advances in technology – GPS systems to guide farm machinery and reduce overlap, early pest detection, identification of soil nutrient deficiencies, detection of plant stress, use of yield monitoring equipment – all advances that can significantly help the small farmer.

- **Supporting the development of public-private partnerships** by working to match small farmers with business professionals to help farmers improve management, develop new markets plans and improve use of risk management tools and risk reduction strategies.
- **Bringing all key stakeholders together to develop 21st century policy and initiatives to support small farms.** We must design new approaches to 21st issues by making sure everyone is at the table – small farm growers, ranchers, producers, distributors, environmentalists, consumers. This can be done both through an advisory commission and a new state office that will be permanent structures to identify barriers to small farm success, develop innovative responses, develop strategies to expand and keep report annually to the legislature and governor on how to focus on small farm development.

We should establish an Administrator of Small Farm Programs within the Tennessee Department of Agriculture to focus on small farmers' issues and work to create solutions to individual and regional problems as they are identified. The administrator will have the resources of the Department of Agriculture to funnel to small farms as well as be charged with finding new ways to support small farms.

And we must bring together all of the public and private groups involved in supporting and promoting small farmers and local markets through a Local Foods Commission. This commission will be charged with coordinating all of our efforts and to evaluate the extent to which our schools and state government uses Tennessee local farm products for meal preparation, and develop plans to increase such efforts.

- **Helping farmers tap into grants, low/no interest loans, tax credits and new credit opportunities.** We can work with our federal public officials to renew discussions to implement the Farm and Ranch Risk Management Accounts (FARRM) initiative. Similar to tax-deferred retirement accounts, FARRM would allow farmers to reserve a portion of income in a tax-deferred account that could be tapped without penalty during downturns in income. Small farmers would then have some protection against dramatic swings in income that are often a major hurdle for small farmers.
- **Expanding and building on federal and state tax credit and grant programs** to support small farms and specialty crop growers with loans, grants and tax credits so that young farmers who want to get into the business can and those already operating can grow and be viable enterprises. There are dozens of programs now available for farmers in the form of grants and tax credits that can be used by small farmers and we need to make sure they understand and apply for such benefits. Examples of programs that can be targeted for small farmers include:

- The Microenterprise Investment Tax Credit: a credit available to businesses that increase investments can be applied to small farmers and first time farmers.
 - The Guaranteed Loan Interest Assistance Program used to help farmers stay in business.
 - Various bond programs that can be targeted to first time farmers to help with loan payments.
 - Federal Grants: Rural Business Cooperative Service to support value-added activities and to support the formation of cooperatives; Rural Business Opportunity Grants to provide assistance for business development and economic planning for rural communities; Rural Economic Development Loan and Grant Program to promote economic development and job growth.
 - Tennessee's Agricultural Enhancement Program, Producer Diversification Cost Share Program, and the Farmers' Market Grant Program among others.
- **Working at both the federal and state levels to extend Estate Tax exemptions.** Tennessee has followed federal law in raising the threshold for estate taxes, which is now set at \$3.5 million. Small farm owners have benefited from this increase. The law, however, is expected to sunset in 2011. We need to work to make sure that does not happen. In fact, we should work to enact the Save the Family Farm Act to exempt the entire amount of a farm from inheritance tax as long as it remains an active farm.
 - **Building upon the rural economic development strategies put in place by the Bredesen Administration.** In 2007, the Bredesen Administration recognized that most of the job creation in Tennessee had been centered around the state's larger urban areas and that much of rural Tennessee had not shared in that growth. In response, the Governor announced the Rural Opportunity Initiative (ROI), a series of steps designed to boost rural economic development in the state.

Successful components of ROI – such as the aggressive series of tax credits for companies locating or expanding in areas with traditionally high unemployment and the “Orange Carpet Tour” program that allows communities to market themselves to site selection consultants who only rarely visit small, rural communities – must be continued.

We also must continue to work with our private sector partners to generate the capital needed for start-up businesses in the rural areas of our state. Tennessee's Rural Opportunity Fund, a first-of-its-kind partnership between the Governor's Office, the Tennessee Bankers Association and its member banks, and the Southeast Community Capital Corporation, has created a \$10 million revolving loan fund for small, disadvantaged, and start-up businesses in Tennessee's rural communities.⁴³ This fund provides affordable loan capital to rural businesses that are unable to obtain bank financing but have good opportunities for growth. The Fund targets businesses that can create and retain jobs and wealth in Tennessee's rural counties that are most in need of job and wealth creation.

Champion, sustainable, Tennessee-grown products

Farm policy of the 21st century of necessity must rethink markets and develop new ways to bring farmers and communities together. Small farmers need focused efforts that recognize

their unique place and their contribution to the community. To the extent we help communities understand the benefits of – and take advantage of opportunities to purchase –locally-grown products grown in a sustainable fashion, we will help not only the farmer and our rural communities but also the health, environment and economy of *all* Tennessee. We can do this by:

- **Helping small farm operators to be grow sustainably so that they remain stewards of the land** – using sustainable farming techniques to protect natural resources. Food production requires a tremendous amount of energy – costs of which continue to rise along with the growing concerns about the depletion of fossil fuels and dependence on foreign imports. Studies generally show that it takes three calories of energy to create one calorie of food.⁴⁴ When adding in energy for processing and transportation, estimates go up to seven to ten calories of energy to produce one calorie of food.⁴⁵

We can help small farmers use techniques to reduce energy consumption such as:

- Using new tilling techniques and rotating crops to conserve soil.
- Conserving water through more efficient irrigation systems and minimizing use of toxic pesticides.
- Protecting air quality by reducing dust, lowering emissions and eliminating toxic spraying.
- Using renewable energy sources such as wind, biomass and geothermal energy.
- Revising our price support programs and tax credits to allow farmers to realize benefits from alternative practices.

And we need to create a systems approach to sustainable farming that includes all key stakeholders in forming coalitions to address policies on a local, regional and national level – researchers, small and larger farmer owners, consumers and policymakers.

- **Maintaining green space within communities.** Preserving farms, not only keeps the small farmer in the agricultural system, it maintains open space around communities that adds to the quality of life for every resident. A conservation easement is a tool that has been successfully used in Tennessee to protect hundreds of acres of open space; keeping property in private ownership with significant public benefit. We should do all we can to support the use of such mechanisms to preserve open space and protect the family farmer.
- **Promoting local consumption.** As farmers control more of the entire production and market process, they can expand their share of local markets and make farming profitable for the small farmer.
 - Increase efforts to link residents to local farm products, including ways to help shoppers get to markets and engage non-farm local residents in food and farming issues -- local government can run free or reduced-fare bus routes to farmers' markets on market day; food markets can advertise nutritional benefits of local produce; small farms can operate "pick your own" days, churches and community centers can have fund-raising dinners that emphasize local produce.
 - Help small farmers develop a competitive advantage by promoting their "smallness" as a positive aspect of their products. Focus marketing to help farmers communicate directly with consumers through such things as farmers markets or direct marketing to local restaurants.

- Work with restaurants/markets to promote consumption of local food. Communities are developing such initiatives as “Farm to Fork” Week to promote the use of local, fresh food in specially designed menus at local restaurants. These initiatives are helping communities understand the benefit and added value of locally grown produce.
- **Promoting access to fresh produce in inner city, poor neighborhoods.** Hunger and poor nutrition are especially prevalent in urban and rural areas. The availability of fresh vegetables and fruit is essential to good health and well-being, and yet many urban residents don’t have easy access to fresh, unprocessed foods and are forced to shop at small convenience stores. In recent years, large supermarkets have been leaving the inner cities while the rural population has limited access to supermarkets and often must travel great distances to reach them. The most vulnerable populations – the urban and rural poor – are left to shop in convenience stores with limited selection and higher prices. There are many steps a state could take to improve access to healthy, local-produced foods that would improve the health and economic well-being of both our cities and rural areas:
 - The Pennsylvania Fresh Food Financing Initiative has helped open new supermarkets and grocery stores in underserved communities across the state. Together with The Food Trust and the Greater Philadelphia Urban Affairs Coalition, The Reinvestment Fund (TRF) formed a public-private partnership to support the initiative. Using \$20 million in state funding to attract private dollars, TRF has grown those initial state funds into an \$80 million multi-faceted pool, which will help finance supermarkets and other grocery retailers, creating hundreds of jobs.
 - Inner city neighborhoods with limited access to decent food stores and fresh produce can benefit significantly by establishing local farmers’ markets. Churches, community groups, homeless shelters, agencies providing meals to the elderly – all can link directly with small farmers to set up cooperative agreements for farmers to sell directly to these groups, thus providing nutritious food products at reasonable costs. For example, the Farmer's Market Nutrition Program was started in Pennsylvania in 1988 to allow WIC participants to purchase fresh fruits and vegetables through farmers' markets; participants are given a coupon to use toward purchases at farmers' markets across the state.
 - To increase the amount of fresh food that reaches inner cities and rural areas, cooperatives have been developed to enable small, family-owned farms to transport their fresh foods at reduced costs while at the same time providing this much-needed produce in underserved areas. By increasing consumption of locally-grown food, we could be reducing transportation and fuel costs, reducing pollution and pesticide use, retaining flavor and nutrient value, and contributing to the maintenance of farms and farm-related jobs in Tennessee.
 - Farmstands also provide inner city residents access to fresh produce with benefits for the small farms and urban residents. The successful Greenstands Project in Pittsburgh, which brought food stands to housing projects where supermarkets are in short supply, should be expanded throughout the state through increased cooperation between city food banks and suburban farms.
 - "Food buying clubs" or cooperatives owned and operated by and for local communities also bring fresh foods to these areas at low cost. The state can encourage the establishment of food-buying clubs at elementary and high schools by authorizing the clubs to accept food stamps (in addition to cash) from members and receive reimbursement from the state to make further purchases.

- **Increasing efforts to brand Tennessee.** We can do more to identify Tennessee food products as good, healthy food brands and to connect new farming initiatives like agritourism to economic development. The Tennessee Specialty Food Association's Farmlink program and the Pick Tennessee Products initiative of the Tennessee Department of Agriculture are examples of how we can increase the brand recognition of Tennessee farm products. These efforts should be increased and expanded. USDA reports that in 2000 farmers purchased over \$375 million online and sold nearly \$300 million in crops and livestock.⁴⁶ Farmers are increasingly using the internet, as we all are, to develop niche markets and to brand commodities. In a matter of minutes consumers can check on the source of products, production processes and crop characteristics such as whether or not the farmer used organic processing. These are all avenues for production and sales that can help small farmers take advantage of technology and marketing plans to brand Tennessee.
- **Expanding the Tennessee Agritourism Initiative** which is a cooperative effort among the TN Department of Agriculture, University of Tennessee Extension and the Center for Profitable Agriculture. Use this initiative to continue to train and educate farmers about agritourism and help with marketing and promotional efforts.
- **Developing a Local Foods Commission** to bring together all of the public and private groups involved in supporting and promoting small farmers and local markets to coordinate efforts for the best impact.
- **Requiring the Local Foods Commission and Administrator of Small Farm Programs to evaluate the extent that our schools and state government use Tennessee local farm products** in meal preparation, and develop plans to increase use.

All of these initiatives – helping farmers to survive and thrive, encouraging them to use sustainable and environmentally-friendly techniques, promoting the consumption of healthy, locally-grown foods – will help to ensure that we have a sustainable agricultural system that is economically profitable for the farmer, environmentally healthy, and socially equitable. Sustainability means we use available resources without unnecessarily destroying those resources for the future, that we increase productivity and preserve our natural resources, that we enable local farmers to produce commodities and connect directly to their communities as well as to the world. All of these can and must be done with clear and direct government policies and support – balancing support of small farmers within a larger system of agriculture that meets the community and world's food requirements.

Step Three: Building a Sustainable Financial Base

So far, I have applied the principle of sustainability to energy and agriculture – two areas where this is a common concept. But I also think we need sustainable *finance* – and not only am I uniquely qualified to speak to this area, but also, as I noted at the outset, current events have proven me correct.

Despite the current chaos in global financial markets, there cannot be any doubt that finance remains “the life-blood of our economy,” as President Obama recently put it: “In terms of just growing our economy, we’ve got to have enough credit out there to fund businesses, large and small, to allow consumers the flexibility to make long-term purchases like cars or homes. So that’s not going to change. And I would be concerned if our credit market shrunk in ways that did not allow for the financing of long-term growth.”⁴⁷

But there also cannot be any doubt that the financial system that had built up in the go-go years of the 1990’s and the first decade of this century was not sustainable: We know it wasn’t, because it collapsed.

We need finance – and that won’t change – but precisely because we need it, we need it to be *sustainable*.

At the beginning of my career, I traveled frequently to community banks across our state. I would often leave on a Wednesday evening for Knoxville or Jackson and drive over 1,000 miles visiting the local attorneys, bank presidents and reaching out to some of the directors in the towns across the state. I realized that our local economies and their ability to grow, finance and modernize are essential to our state prosperity. Local banks still talked to their customers face to face – something that Wall Street could take lessons from. The directors are key players in their communities and know their territory, neighbors and businesses. By meeting with these banks, I managed to visit all 95 counties several times over. But, nowadays, we don’t have community banks anymore – they’re all just branch offices of mega-national banks. And that says something about what’s wrong with our financial system, both globally and closer to home.

I hope we’ve learned some pretty clear lessons from this recession – lessons I saw coming a decade ago:

- As a nation and a society, we must get away from debt- and leverage-driven economic speculation that contributes nothing to our actual wealth.
- More generally, we must stop borrowing to finance consumption and instead focus on investment.
- We must never forget the limits placed on our economic life by the limitations of our natural resources – and so we must always strive to reduce waste.
- And we must invest in real assets with income-producing potential.

What is true for America is true for Tennessee. I’d like to see Tennessee become a model for sustainable economic development and sustainable finance. We need a

comprehensive economic development strategy based on a clear understanding of the kind of economic future we want to create.

Now, clearly, everything I just said applies with equal force to the public sector, as well as the private sector. Our government leaders and public policies must finally confront these same realities. In response to the challenges of this new age, just last year, all levels of governments enacted 683 climate and sustainability action plans and 1,193 mayoral initiatives across the country. That's a good start – but government must recognize that just as we can no longer afford to waste sources of energy, land, and water, there also are no revenues left to waste. Nor can we continue to operate government by borrowing from the future and running up public debt. At the same time, we need to be putting the public resources we have into investments that we know are the truth sources of wealth and growth in the 21st Century – human capital.

Of course, many will say that that's why we need to raise taxes – particularly income taxes. I've got a different perspective. I don't think we're going to pay for the investments we need to make in sustainable energy, sustainable agriculture, and a sustainable economy through an *unsustainable* fiscal policy – and that's exactly what taxing our own incomes would create, just as much as failing to generate the revenues to pay for what we spend, as Tennessee has done until now. I think both these poles are unsustainable. I have a different solution.

Encourage capital inflows

You remember the community banks and community-based finance I mentioned a moment ago? Well, just as we need to stop sending our money out-of-state for our energy and for our food, we need to start producing more of our wealth in Tennessee and getting others to send *their* money here to *us*.

I want to see Tennessee stop spending money it doesn't have so that we have to borrow from elsewhere and mortgage our futures to someone else. Instead, I want to see us investing in our own futures – a new energy economy, sustainable communities from cities to farms, a top-flight workforce, and our children's educations – and I want to see us getting the money for that from outsiders paying *us* instead of the other way around. *That's* what I mean by sustainable.

Today businesses and people can operate and move anywhere and we are more mobile than ever. It is essential that people want to move to Tennessee, invest their savings locally, rightfully believe their money is safe and not be penalized through onerous taxes for doing it, that people can create jobs, and afford new opportunities.

One obstacle is that the Franchise & Excise tax and how it is enforced and causes small businesses to domicile outside the state. Furthermore, the F&E tax restricts the ability of small investment to get new business and jobs off the ground with secure footing and makes the risk more onerous than need be. This should change.

And, I know of no better way to chase away the people, businesses and jobs that we have recruited to this state than a state income tax. I talked to the CEO of a business that moved to Nashville a few years ago. He said that he sold his home in Washington State,

moved his family and business and invested over \$45 million in this state solely because there is no state income tax. Tennessee should never lose this advantage.

So, where *are* we going to get revenues? From economic growth – economic growth fueled by capital inflows rather than, as has been Tennessee's historic pattern going back to the battles over the first national banks, capital *outflows*.

We can start by encouraging small business development. We know that small business creates roughly three of every four new jobs.⁴⁸ And we have learned that depending on our own base of vibrant small businesses is a more reliable route to sustainable prosperity than casting our fate to the winds of multinational capital flows or business trends. Too often, states believe that they must chase out-of-state corporations to move there with incentives and bonuses paid for by in-state businesses and workers. But it turns out that more jobs are created by small businesses already in our communities than by all the Fortune 500 companies combined. We must make Tennessee an entrepreneurial state that encourages small business development, and rewards savings and investment, right here in Tennessee.

Expand innovation, start-ups, and entrepreneurship

Technology and innovation experts have told us that we must do a better job of nurturing our new businesses and furthering existing firms here in Tennessee by assisting them in attracting funding for research as well as the incubation of new ventures.⁴⁹ We have many nationally-renowned facilities for research and development (R&D) here in Tennessee, including Vanderbilt University, Oak Ridge National Laboratory, University of Tennessee system, St. Jude Children's Research Hospital, the Y-12 National Security Complex, and the FedEx Institute of Technology, and many more.

However, we are not doing an adequate job of developing commercialization mechanisms to turn profits from the scientific innovations that we produce every day at our research centers. We know that the success of Nashville's health care industry came about because of the active engagement of the private sector with educational and research institutions. We need to expand commercialization in the health care arena – but we cannot stop there. We are missing a huge opportunity for economic development here in Tennessee if we do not do a better job of turning our R&D into profitable consumer products.

Tennessee must create a business climate that will encourage investments in our home-grown businesses and help promote the innovations and technologies we create here in our companies and universities. Earlier in this paper, I discussed our need to invest in venture capital firms with a commitment to pursue investments in Tennessee, and to make significant investments in human capital through our education and workforce development systems. We also need to:

- **Work with the University administrations to encourage faculty to pursue entrepreneurial ventures and collaborate with private industry and entrepreneurial companies to commercialize our research results.** We should encourage research and entrepreneurial efforts by our university faculty with policy changes to allow for increased sabbatical leaves and consider establishment of a for-profit technology commercialization entity to provide start-up assistance, referral services, advisory services, and office and lab space to faculty entrepreneurs.

- **Target our efforts to grow innovation and technology by focusing on the industry clusters unique to each part of our state.** The Tennessee Technology Development Corporation has identified five key areas for cluster groups in different parts of the state including:
 - Nashville - Health Management/IT.
 - Tri-Cities - Drugs/Medical Products.
 - Oak Ridge & Knoxville – Nanotechnology.
 - Chattanooga – Energy/Environment/Transportation Technologies.
 - Memphis - Advanced Manufacturing/Logistics.⁵⁰

We should use these and other strategies for targeted and clustered economic development to ensure that we are doing the best job possible to capitalize on the unique strengths and assets of each part of our state to build the most comprehensive plan for economic and job growth statewide. Let me pick use these to illustrate the larger point:

The flip side of growing as much of our economy as possible *at home* is getting those from outside our state to send us their money for our home-grown products and industries. In other words, the way to prosper is by exporting not importing, by selling to others rather than just buying from them, so that we generate the revenues we need to invest rather than to borrow. *That's* sustainable finance. And it depends on creating capital in-flows.

But what is an export industry isn't necessarily so obvious. Yes, manufacturing goods that can be sent to others elsewhere is exporting – but so are plenty of other activities that involve extracting capital from outside Tennessee for investment and use *within* Tennessee. And, in the New Economy, there are many more ways to do that. Everything on the list above represents a potential export industry that will bring capital *into* out state: Nanotechnology represents new manufacturing potential that can become an export industry in the traditional sense – as do the new energy and environmental technologies we've discussed throughout this plan. But health care and medicine represent “export” industries, as well – bringing out-of-state spending into Tennessee. Not so far afield from the increased prevalence of medical travel is tourism – while transportation and logistics do the same thing with goods that our health care and tourism industries do with people: bringing them to our state from outside for long enough for us to extract a share of the profits.

I believe Tennessee has tremendous potential to bring in capital from outside through a wide variety of innovative “export industries” – starting with the energy and agricultural fields I've already discussed. Here are a variety of other ways we can be a national leader in bringing capital *in* to finance the investments we need to grow our economy in the 21st Century:

Grow our “Mailbox Economy” by attracting high-income seniors

One of the simplest ways to attract new capital is to attract high-income seniors—retirees or those looking for a good place to retire. These are people with significant income and property wealth, who can help expand a community's economy and tax base without placing many demands on public services.

Many retirees derive income from Social Security, private pensions and other retirement accounts, and investments, creating an externally-driven “mailbox economy” that by definition brings in capital to our state.

Studies have shown that when the average retired couple moves into town, they bring with them \$42,500 per year in annual cash flow, including about \$6,500 per couple in Medicare benefits.⁵¹ According to research from the University of North Carolina, a retired couple moving into an area represents the economic equivalent of 1.4 new factory jobs.⁵²

We can and should make Tennessee the leading retirement magnet in America over the next decade, attracting many thousands of affluent seniors, along with their savings, their income, and their many contributions to community life. Contemporary retirees often return to school, take part-time jobs, or open small businesses. There is more to their economic contributions than what arrives in the mailbox.

We already have a number of major competitive advantages in this area: a warm but temperate climate, top-tier health facilities, proximity to world-class recreational opportunities, and our attractive Southern way of life. And, as long as we do not establish an income tax, Tennessee will continue to make good financial sense to retirees, as well – another reason I oppose such a tax.

But other states have become aggressive in attracting retirees. Tennessee should do so, as well, if we are to become the national leader in retiree recruitment. We should:

- **Let retirees audit classes for free in our state community colleges, colleges and universities.** If they return to work or open a small business this will only grow the local economy more.
- **Develop and aggressively promote recreational and cultural opportunities in areas well-suited for retiree populations.**
- **Market our communities to targeted retiree pools such as retired military personnel.**
- **Expand the “Retire Tennessee” program of the Department of Commerce and Economic Development to help local communities market themselves directly to retirees across the county who often conduct web-based research to select possible retirement sites.** This program should help each Tennessee county to develop its own “retiree webpage.”
- **Enhance health care services, research, and treatment facilities, all of particular value to retirees.**
- **Coordinate tourism and retirement promotion efforts to make visitors to Tennessee destinations aware of retirement opportunities.**

Create a world-class health care industry

Given the aging (and increased longevity) of our nation's population, along with ever-rising public and private investments in sophisticated health care technology and advanced treatments, the health care industry is one of the few absolutely guaranteed high-growth sectors in our economy. It's central to maintaining economic productivity. And it's, obviously, crucial to the foregoing goal of attracting retirees.

Smart states are preparing a 21st century health care system for their citizens.

Even smarter states are creating world-class health care industries that will not only provide services to local residents, but will also grow the economy, produce high-wage jobs across a wide range of occupations, attract investors and retirees, and bring in patients from across the country – and, in fact, the world – to seek treatment and spend their health care dollars. In short, health care can be not just an important element of our quality of life but also an export industry and a source of capital inflow.

And Tennessee is well positioned to lead those smarter states, if we act now and act wisely.

We have watched Nashville become one of the premier health care industry clusters in the country and seen how successful health care companies have spawned successful offshoots to create one of the state's most vibrant economies.

The Nashville Health Care Council reported last year that more than 575 organizations with connections to Nashville's health care industry generated more than \$80 billion and employed more than 430,000 people on a global basis.⁵³ Despite the national economic slowdown last year, Nashville's health care industry still saw numerous start-up companies enter the market and five headquarter relocations between 2007 and 2008.⁵⁴

In general, Tennessee has done an admirable job of attracting and growing health care management jobs and investments. We also have a strong foundation in medical research facilities. But that is not enough, and our ability to attract jobs and investment to our health care industry is by no means limited to the Nashville area. We should now build upon our strengths by:

- **Developing world-class health care service and treatment facilities** to bring patients to Tennessee from around the globe for the services they need. We should look closely at what Texas has done through the MD Anderson Cancer Clinic in Houston, and what Minnesota has done through the Mayo Clinic in Rochester. Quality health services can have a tremendous economic multiplier effect in support and related industries.
- **Expanding linkages between public and private medical institutions**, including the University of Tennessee Health Science Center in Memphis; East Tennessee State University's Quillen College of Medicine in Johnson City; and the Vanderbilt and Meharry Medical Schools in Nashville. Improved coordination among our medical schools is particularly timely given Meharry's new multi-million endowment from the Robert Wood Johnson Foundation to launch the new Robert Wood Johnson Foundation Center for Health Policy on their campus).⁵⁵ Synergy among institutions can attract public, private,

and non-profit resources in a “virtuous cycle” of investment, growth and further investment.

- **Increasing the commercialization of Tennessee’s medical research and the subsequent manufacturing of medical products** to maximize the number of health care-related jobs we create here in Tennessee.

Become a trans-shipment center

When assessing our opportunities for targeted economic development, we should not stop with just technology clusters. We should also build upon the intrinsic strengths we possess in other industries. For example, Tennessee should become a trans-shipment center for the nation and the world.

We know that the transportation, shipping, and logistics industries produce high-wage, high-growth jobs – and logistics especially is projected to be among the biggest growth-industries of the 21st Century. And being a place that people and things pass through as efficiently as possible is perhaps the ultimate way to derive capital from outsiders, maintaining investments while keeping the costs relatively low for our own citizens.

Currently, there is no single international hub that combines logistics, shipping, warehousing and distribution capabilities. But when you consider Tennessee's current advantages of transportation access, intellectual know-how, existing logistics abilities and customer demand, *it's clear Tennessee could become the transshipment capital of the country, if not the world, with proper planning and implementation.*

We have a unique geographical position at the intersection of interstates and the Mississippi River. We have airlinks in Memphis through FedEx and UPS unmatched anywhere in the country. All of this gives us a unique intermodal capability to connect ground, water and air shipping with already-existing private sector logistics management expertise and easy access to the vast majority of the American market. In short, as the capital of Mid-America, Tennessee ought to be the heart of the logistics and trans-shipment industries. And with our neighboring state of Georgia already ranked as one of the top five states for logistics innovation⁵⁶, we have the potential to build a regional logistics industry connecting the American market to the rest of the world.

We need to make this a source of greater capital inflow for Tennessee. We can do this by:

- **Building a university-based center on logistics and transportation management**, like the Supply Chain and Logistics Institute at Georgia Tech, to add to our in-state commercial expertise in the logistics field.
- **Developing a transportation intranet** to provide enterprise wide transportation logistics built upon one common standard for file transfer and data exchange, and an IT logistics portal through which users (G2B, G2C, G2G) would pay to have access codes and transportation logistics services. This opportunity would provide end-users complete control and flexibility to make transportation logistics changes by offering complete and seamless visibility of the movement of goods or data from the

point of entrance at Tennessee's ports, airports, and ground portals to the end user's own logistics system and further transport beyond Tennessee. The key, as it is in corporate enterprise-wide systems, is to develop one standard for file transfer among all the state's transportation modes.

- **Investing in a trans-Tennessee intermodal high-speed rail link** to connect our major air centers in Memphis and Nashville with our interstates and waterborne commerce on the Mississippi and Tennessee rivers. Such a rail link would also tie in to my energy-conservation and environmental preservation strategies – as well as create countless well-paying construction jobs. I will discuss this possibility at greater length in a separate paper later.

Drive economic development through tourism

Tourism by definition attracts outside capital from travelers who spend dollars on food, lodging, gasoline, entertainment products, and various services, while paying sales taxes on every purchase. So long as tourism is compatible with the infrastructure to support it and the preservation of the resources that attract it, it is an economic development tool of enormous value.

Tennessee has a thriving tourism sector, benefitting from our natural resources, our entertainment industry, and our geographical positioning. In 2007 alone, tourism's total impact on our state's economy amounted to \$14.2 billion, with \$5.4 billion in payroll generated by direct travel spending. In the same year, overnight and day-trip visitors contributed \$1.1 billion in state and local sales tax revenues. More than 184,000 Tennesseans are now employed in the state's tourism industry.⁵⁷

While we are doing well, tourism remains centered on well-known destinations like Memphis, Nashville, and the areas in and near the Great Smoky Mountains National Park. Our tourism efforts could benefit from an aggressive statewide strategy that provides financial and technical help to smaller communities to allow them to capture more tourism dollars.

To expand tourism opportunities, we should partner with communities, *large and small*, to create a "Tennessee Tourism Fund" (TTF) to help develop tourism attractions and linkages throughout the state. This Fund would have three components:

- **Major tourism facilities and attraction funding.** The TTF would provide State financial assistance in the form of grants, loans, forgivable loans, and loan guarantees to communities for the development of major facilities and attractions such as large multi-million dollar projects such as sports venues.
- **Community Attraction and Tourism (CAT) grants.** For small and medium-sized cities throughout the state, CAT grants from the TTF could be made available for smaller projects that are vital for tourism in less-densely populated areas (e.g., restoration of historical sites or local parks).
- **Tourism Connector Grants.** These grants could be used to create and support regional and statewide linkages between our current tourist destinations, such as

programs and/or transportation modes designed to link Memphis and Nashville's music tourism destinations.

We should also continue and expand Tennessee's commitment to "sustainable tourism," building on the initiative begun in 2008 for the Great Smokey Mountains National Park. "Sustainable tourism" means growing the tourism industry while protecting environmental and historical sites. **This should become a statewide focus as we create "sustainable growth."**

When successful, tourism initiatives tend to be largely self-financing, but Tennessee should consider some specific new tourism-related revenue streams to support expansions to our tourism/economic development efforts. Funding sources such as surcharges on car rentals or hotel in-room movie rentals could be used to support these efforts and paid primarily by out-of-state visitors rather than Tennesseans.

Conclusion

In this document, I've tried to spell out a plan to make Tennessee great again that probably isn't what you'll hear from most politicians. It probably isn't even what you've been hearing from most financial and economic experts – you know, the ones who didn't see the current downturn coming. Well, the “same old same old” just isn't me – and if that's what you're looking for, then I am not your man. But if you're looking for a different way of thinking that's been proven right time after time, especially in these tough ones, I've got one. I'd like to help make it successful for all Tennessee, as well.

To do that, we need to start thinking differently: We need to invest in the technologies and practices that will reduce our dependence on carbon fuels that make our communities – not to mention our planet - less livable. We need to invest in our farms and rural communities – and urban greenspaces – to boost their ability to sustain themselves and provide the rest of us with healthy food and environmental husbandry of our remaining countryside. We need to invest in the means to finance our growth in ways that recognize our true assets – such as our human, intellectual, and natural capital – and the needs and opportunities generated by the imperatives of demographic trends – rather than the false and fleeting values of financial assets. In sum, we need to start thinking *sustainably*.

A sustainable Tennessee will be one where our people and our natural resources are truly valued, nurtured and treated as our primary investments. That means becoming a leader in the green economy, a leader in solar, geo-thermal and biomass, a leader in energy-efficient housing and homebuilding. It means being a leader in science and technology and ensuring that academic investments in these fields are practical and connected to the green economy. It means supporting business incubators to grow the industries and jobs of the future here in Tennessee. It means forming partnerships between these businesses and our schools to help our children and our workforce succeed. And it means investing in producing world-leading community colleges and tech schools across the state, leading and regenerating the charge, doubling the number of associate degrees in five years and bachelor degrees over the next decade.

I will be providing further details on how we can make these investments in our people in the weeks and months ahead. In this document, I have tried to spell out how we can build the industrial, natural, and financial foundation for making these investments and succeeding in the 21st Century.

It is not too late to address these challenges. But it is certainly not too early: It is time. It is time for foresight. It is time for leadership. It is time for a plan.

This is the plan.

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