Metropolitan Policy Program
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The Next Economy: Transforming Energy and Infrastructure Investment
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Introduction

It is great to be in California with a group of individuals who are at the cutting edge of economic transformation, our topic for the day.

The "Great Recession" has been a wake up call for the nation.

It unveiled an economy dangerously out of whack: frenzied with consumption, wasteful in its use of energy, more adept at increasing inequity than sharing prosperity, more successful at exacerbating rather than easing divisions between Wall Street and Main Street.

It is time to get back on track and lay the foundation for a radically different kind of growth in our country.

In that spirit, I make the following proposition:

First, as Larry Summers and other respected economists have intoned, the shape of the next American economy must be export-oriented, low carbon, and innovation fueled. This is a vision where we export more and waste less, innovate in what matters, produce and deploy more of what we invent. This is the kind of productive and sustainable economy which must emerge from the rubble of this recession.

Second, the next economy will be led by metropolitan areas. They are the hubs of trade, commerce, and migration and the centers for talent, capital, and innovation. They contain the infrastructure to move people, goods, ideas, and energy efficiently and the institutions to educate and train the workforce of the future. Metropolitan areas **are** the engines of national prosperity.

Finally, to build the next economy, the United States must connect the macro vision to metro reality, the macro to the metro. We need to leverage the market energy and creativity found in our metros with smart, game-changing federal and state actions. And we need a full court press on delivering an educated and skilled workforce, which can drive the next economy and must benefit from it. The next economy must be **opportunity rich** as well as export oriented, low carbon, and innovation fueled.

All this will not be easy.

We compete in a fiercely competitive world where established nations like Germany and rising nations like China, India, and Brazil are moving forward. These and other countries are making seismic and ultimately transformative investments in renewable energy, in modern ports, in high speed rail, in metropolitan transit.

And America? We seem stuck in political polarization and hyper-partisanship.

Our challenge is to convert the dynamism in this metropolis… and others like it… into solutions that are pragmatic, far reaching and critical to this moment. We must move as quickly as possible to change the mental map of our nation from a constitutional union of 50 states to an economic network of highly connected, hyper-linked, and seamlessly integrated metropolitan areas.

The most important action we take in the aftermath of this recession is to build for the future. The stakes could not be higher.

So let me begin by offering a vision for the next American economy… one that is export oriented, low carbon, and innovation fuelled.

Let's first visualize an economy where more firms in more sectors trade more goods and services seamlessly with the world, particularly with the rising nations that are rapidly urbanizing and industrializing. As President Obama said in last week's State of the Union, "The more products we make and sell to other countries, the more jobs we support right here in America."

The departure from the current order of business could not be starker. The American economy has become dominated by imports rather than driven by exports. Our trade deficit rose sharply this decade, from $380 billion in 2000 to $700 billion in 2008.

According to the World Bank, exports make up only 11 percent of the GDP of the U.S. compared to 40 percent in Europe, 40 percent in China, 36 percent in Canada, 22 percent in India and 16 percent in Japan.

As Howard Rosen of the Peterson Institute recently summarized, exporting is almost an unnatural act in the U.S.: Only 4 percent of U.S. companies export. Less than 0.5 percent of U.S. companies operate in more than one country.

Can we get back into the export game? The answer is decidedly "yes."

For the first time in recorded history, more than half of the world's population lives in urban and metropolitan areas. By 2030, the metro share will surpass 60 percent. Across the globe, metropolitan economies are driving demand for increased trade and commerce, only temporarily abated by this downturn.

The U.S. can play in this expansion. We still manufacture a range of advanced goods that the rest of the world wants including aircraft, spacecraft, electrical machinery, precision surgical instruments, and high-quality pharmaceutical products.

And we are poised for a quantum leap in the export of high value services.

Educational services are already a key export with some 670,000 international students flocking to our world-leading institutions of higher learning.

Our exports to China of management, consulting, and public relations services increased by 36 fold from 2002 to 2008. Our exports to India in construction, architectural, and engineering services increased 39 fold over the same period.

America's potential for exports is hidden in plain sight. President Obama's challenge last week, to double exports in five years, is exactly the kind of ambitious, far reaching goal we need at this moment.

Low carbon is the second, related hallmark of the next U.S. economy. Let's imagine a world where America not only leads the global transition to sustainable growth but uses breakthroughs in technology and practice to spark a production revolution at home.

We have a long way to go.

The United States has been slow to embrace the potential of the green economy, despite having twice the per-capita carbon dioxide emissions of other industrialized nations.

Only one of the world's top ten solar production firms is American. The same ratio holds true for the manufacture of wind turbines.

China is seeking to dominate the race to green, dedicating $221 billion of their recent stimulus package on renewable energy and other green investments, compared to $94 billion in the United States.

Make no mistake: the transition to a low-carbon economy is fundamentally about markets.

The energy we use will migrate from an almost exclusive focus on carbon based fuels to a more sustainable mix: natural gas, solar, wind, hydro, geothermal, ocean waves, and bio mass.

The infrastructure we build will shift from 20th century models of transport and energy transmission to rapid bus, ubiquitous broadband, congestion pricing, smart grid, distributed power generation, high speed rail, and intelligent transport.

The products we buy will move from high-carbon gas guzzlers and fluorescent lights to sustainable goods: electric vehicles, energy efficient appliances, smart meters, LED lights, and local food.

And the homes we live in and the office and retail buildings we frequent will be more sustainable in design, more efficient in their use of water and energy, and better arrayed so that people can spend less, walk more, and live a higher quality of life.

Need job creation? The low carbon economy will be delivered by millions of new workers: financiers to finance, scientists and engineers to invent, entrepreneurs to take to market, laborers to build and install new infrastructure, facilities, and products.

Looking for a smart place to invest? The International Energy Association predicts that reducing greenhouse gas emissions to acceptable levels will require additional global investment of $13 trillion by 2050.

This leads naturally to a discussion of innovation… the historic catalyst and fuel for economic growth. The United States must strive to be the world's "Innovation Nation," a hot house of ideas and invention and the platform for advanced production.

For decades, innovation has been the driver of American productivity and growth. Innovations in computers and telecommunication enabled the information revolution. And advancements in health care sparked growth in pharmaceuticals and medical devices.

But American leadership on R&D investment and key indicators of science innovation is slipping.

Incredibly, the U.S. ranks just 45th out of 93 countries in the share that science and engineering degrees make up of bachelor's degrees, incredibly behind Mexico, Uganda, and Estonia. Fortunately, we are ahead of Honduras.

More generally, the next American workforce is ill equipped to drive innovation. African Americans and Hispanics lag on critical indicators. Yet these groups will constitute nearly 40 percent of our workforce by 2050, up from 25 percent today.

And the U.S. lags on the conversion of innovation into home grown production. We have gone from running a trade surplus in advanced technology products in the mid 1990s to running a trade deficit this decade.

Going forward, we will innovate less if we do not produce more.

It is time to rediscover our innovation mojo: in our research labs, on our factory floors, in the trade-able sectors that drive wealth creation and sustainable growth.

So here is my second proposition: the next economy will be rooted in and led by metropolitan America.

The world may be "flat," but modern economies concentrate intensely in a relatively small number of places.

Here is the real heart of the American economy—100 metropolitan areas that after decades of growth take up only 12 percent of our land mass, but harbor two-thirds of our population and generate 75 percent… 75 percent … of our gross domestic product.

This is the true economic geography, enveloping city and suburb, exurb and rural town in one seamlessly integrated whole.

Our metros pack a powerful punch.

Greater Seattle houses only 51 percent of residents in the State of Washington, but generates 69 percent of the economic output of the state.

Chicagoland is home to 67 percent of the population of Illinois, but contributes 78 percent of that state's GDP.

All 26 metropolitan areas in this state collectively house 98 percent of your population and contribute 99 percent of the state's GDP.

Metro areas generate the majority of gross domestic product in 47 of the 50 states, including such "rural" states as Iowa, Kansas, Nebraska, and Arkansas.

Metros like the Bay Area and Silicon Valley matter precisely because they cluster in close proximity networks of large companies, small and medium sized enterprises, advanced research institutions, specialized services, skills providers, and business associations.

Thus, the transition to the next economy will be led by metropolitan areas.

Metros already dominate U.S. trade.

Accounting for just over one trillion dollars of value, the top 100 metros generate 68 percent of the nation's goods and services exports, excluding agriculture and 80 percent of service exports.

Taken together, all of the nation's metros generate 86 percent of goods and service exports excluding agriculture and 92 percent of service exports. .

The value of the exports coming from major metros like L.A., New York, and Chicago is simply stunning. These three super-sized performers exported more than $50 billion apiece in 2007.

Other metros like Dallas, Houston, Boston, Seattle, Detroit, San Francisco, San Jose, Philadelphia, and Portland are also global players, exporting more than $25 billion apiece in 2007.

Collectively, these top 12 metros generated nearly one third of national exports that year.

Yet this is not just about the largest metros. In the metros shown here—Wichita, KS; San Jose; Portland, OR; Youngstown and Toledo OH; Greensboro, NC; Grand Rapids; and Albuquerque—exports make up more than twice the share of gross metropolitan product as in New York.

The top 100 metros dominate exports for another good reason. They are our logistical hubs, concentrating 72 percent of all seaport tonnage, 79 percent of all U.S. air cargo weight, and 92 percent of all air passenger boardings.

The low-carbon economy, like the export-oriented economy, will be primarily invented, financed, produced and delivered in the top 100 metros.

As you know, the investment base for the green economy is intensely concentrated; 94 percent of venture capital comes from the top 100 metro areas.

The most innovative aspects of the green economy will cluster around major, largely metro-based research institutions. Fifteen of the 21 national labs run by the Department of Energy are located within the top 100 metropolitan areas.

Older metros like Akron, Grand Rapids, Dayton, Toledo, and Youngstown concentrate the technical expertise and physical capacity to manufacture wind turbines.

And making our old and new homes, office, retail, and commercial facilities energy efficient will primarily be a metropolitan act, given the heavy concentration of our population, buildings, and businesses.

On innovation more broadly, our metropolitan areas are the nation's knowledge and technology centers as well as magnets for talent and creativity of all kinds.

The top 100 metros produce 78 percent of all patents and receive 82 percent of NIH and NSF research funding. They gather 74 percent of adults with a college degree, 75 percent of workers with a graduate degree, and 78 percent of adults with science and engineering degrees.

In short, the next economy, here and abroad, will be shaped, determined, and delivered by metropolitan areas.

That leads to my final proposition: to build the next economy, the U.S. must connect macro vision to metro reality, the macro to the metro.

The United States is not China. We are not, thankfully, a planned economy, deciding which sectors should grow in which places, and then aligning infrastructure, innovation, human capital, and other investments to make it happen.

To build the next economy, the U.S. needs a playbook that is uniquely aligned to our entrepreneurial nation, where quality growth and jobs emerge from the DNA of metropolitan America: private firms, research institutions, investors, governments, trade associations, philanthropy, and labor.

The federal and state governments, of course, *should lead where they must*, given the need for common markets and transformative investments.

At the same time, networks of metropolitan leaders *must innovate where they should*, given their distinct clusters and competitive advantages and special responsibilities for developing quality places and educating the next workforce.

What does this look like in practice?

Let's start with exports. To double US exports by 2015, Obama's challenge, we need our federal government to act smart on trade and currency, the macro levers for export growth. But those actions alone will not do the trick.

Anyone who travels within or among our major metropolitan areas knows that we are a first class economy with a third class infrastructure.

Our current path is not sustainable. It is economic suicide to expect our major ports, freight hubs and rail corridors to do what it takes… on their own… to stay one step ahead of global forces. And it is fiscally irrational and irresponsible to expect that a system of dispersed and uncoordinated congressional earmarks will get the job done.

We need a new **National Infrastructure Bank** to invest for the future: inter-modal facilities at our congested ports, high speed passenger rail as in Germany and France, congestion pricing as in London. This Bank will act in close concert with the private sector, both to leverage private sector financing and engage private sector firms to get projects done at market speed, on time, under budget.

Yet the federal government alone cannot deliver an export economy.

In a global economy, the heavy lifting will be done by metro areas, where sectors of export strength cluster and concentrate.

Wichita, Kansas, for example, specializes in aviation manufacturing, a sector which trades extensively with countries like France, Japan, and Brazil.

Minneapolis specializes in the production of high precision surgical instruments, a sector with buyers in Mexico, Ireland, and Singapore.

San Francisco specializes in management and consulting services which are exported to countries like China, Germany, and the United Kingdom.

For the nation to compete, these and other metros need to understand their competitive niche in granular ways and then exploit that advantage by helping networks of firms get access to what they need: sophisticated market information, specialized capital, customized job training, export promotion, fast track permitting, collective branding, and marketing.

Those are steps to take on exports. What about the low carbon economy?

Beyond setting a price on carbon, we need a step change in advanced R&D. We recommend a national network of Energy Discovery Innovation Institutes to help trigger breakthroughs in fuel cell technologies, bio mass, geothermal production, wave power, carbon sequestration, and bio fuels.

These institutes would not generate ideas in a vacuum. They would connect closely to established and start up firms, suppliers and producers to accelerate the cycle of invention, financing, commercialization, and deployment.

Like infrastructure, this is a radical departure.

The federal government's non-defense energy-related R&D funding of about $5.4 billion per year is a 33 percent decrease from 1980 in real dollars, and an 80 percent decrease when taken as a share of GDP. We suggest that the nation grow our investment to $20 billion per year, placing energy innovation on a comparable level with health care and defense.

Here again, federal interventions are not enough. While some metros play a substantial role on energy research, all metros can take steps to develop livable places that move away from a sprawling, distended landscape to communities that connect jobs, housing, and transport for people and firms.

Metros are already on the case. Denver has made significant local investments in its light rail and rapid bus system and is concentrating mixed-use facilities around the transit stations. Charlotte, Dallas, Minneapolis, Salt Lake, and Seattle have also recently opened

up light rail lines. Changing how places grow will reduce greenhouse gas emissions and could create U.S. grown industries for street cars, light rail transit, and rapid buses

Finally, what about innovation? We desperately need a **national innovation policy** if our metro areas and our nation are going to stay one step ahead of our competitors.

No such national vision exists today. Innovation efforts are scattered throughout the government. Unlike Germany and China, innovation activities are divorced from manufacturing and export considerations. And there is little focus on services innovation and commercialization, although those hold great promise.

We suggest a **National Innovation Foundation**, modeled on successful efforts in Korea and Finland, to bring under one roof and ramp up the government's fragmented efforts to boost commercial innovations in fields such as precision manufacturing, information technology, and clean energy.

To complement a sharpened national focus, metros must strengthen their existing centers of innovation, in public and private research institutions, that stretch far beyond the realm of energy. Just imagine Silicon Valley and the Bay Area without Stanford or Berkeley or Livermore. These institutions form the heart of your regional innovation clusters and are magnets for job generating private and public sector investment.

But this is not just about elite institutions. Local community colleges, post-secondary technical schools and skills providers will deliver the bulk of the next American workforce. An innovative economy can only be built if we have the educated and skilled workers to build it.

Growing an innovation fueled economy, in short, requires strengthening those institutions which disproportionately supply the fuel… and ensuring that qualified individuals have access to those institutions.

Let's go back to our playbook for the next economy.

What I've just described is a radically different vision for federal leadership and metro innovation.

At the federal level, it is a 21st century vision of investment that is delivered by smaller, leaner, more entrepreneurial entities like the Infrastructure Bank or Innovation Foundation or distributed network like Energy Discovery Innovation Institutes. This is a stark departure from yesterday's Washington, which invested without any broad vision or coherent strategy. We may have gotten away with this kind of unfocused spending in the 1970s and 1980s. It will not work for this century.

At the metro scale, it is a 21st century vision of networks that can, synergistically, leverage natural economic clusters, connect transport and housing, and strengthen institutions that deliver innovation and education. This vision treats metros not as

fragmented collections of governments, but as collections of leaders and institutions that link across disciplines, across jurisdictions, across sectors so that the whole is greater than the sum of the parts.

These ideas have the potential to move forward even in this polarized moment. Already, powerful Republicans like Senators Olympia Snowe, Lamar Alexander, and Susan Collins have sponsored legislation in support of the reforms presented today. And Democrats and Republicans routinely collaborate at the metro scale to advance economic growth.

Conclusion

Let me end where I began.

The Great Recession set the conditions for the kind of historic national reset that we witness once or twice a century.

We need to get about the business of restructuring our economy, toward exports and low carbon, in favor of innovation, so we can compete globally and place the U.S. back on the path to prosperity. This path runs directly through our metropolitan areas.

The people in this room and the sectors and constituencies you represent are illustrative of the energy and potential of metropolitan America.

As global entrepreneurs, you understand the urgent competitive challenges we face around the world. You have a clear sense of what other nations are doing to lead the clean energy economy. And you have concrete ideas for what our federal and state governments need to do to enable us to stay in the game, let alone succeed.

As leaders who travel in metropolitan space, you understand the power of clusters and concentration, of livability and smart transport, of schools and skills.

You are a unique, pragmatic, grounded voice in the coming debate over jobs and economy and investment.

Let that voice be heard.

We are a Metro Nation and it is high time we started acting like one.