MEMORANDUM

Date: July 14, 2003

To: Wisconsin Technology Council

From: Kelly Hansen, Chair, Outreach and Public Policy Committee
Wisconsin Technology Council

Subject: OUTREACH AND PUBLIC POLICY (INFRASTRUCTURE) AGENDA
- Statement of the Outreach and Public Policy Issue
- A Proposed Outreach and Public Policy Agenda
- Alternatives

Statement of the Outreach and Public Policy (Infrastructure) Issue

This report will present ideas for building a stronger infrastructure for technology business and job growth in Wisconsin. Some of the ideas relate to the physical infrastructure of Wisconsin – such as its transportation, energy and telecommunications systems – while others relate to building policies that better support technology businesses and workers.

A stronger infrastructure for the knowledge-based jobs and businesses of Wisconsin's future is a stronger foundation for businesses and workers in all sectors. That is because commercial applications of technology will be essential to the competitiveness of virtually every business sector in Wisconsin, from agriculture to manufacturing, from business services to tourism.

The art of technology development in Wisconsin is still nascent. For Wisconsin to take its place among the leaders of the New Economy, some specific things must quickly take place. Wisconsin must quickly create and execute a vision that will:

- Grow, attract and retain more technology-based companies.
- Build an infrastructure to support them.
- Foster a tax and regulatory climate that encourages innovation.
- Incubate a culture that values risk-taking and which attracts enough capital to fund our most marketable ideas.
- Let the world know that Wisconsin has the vibrant research base, the quality of life and the creative workers to help tech-based businesses grow.

The power unleashed by achieving those goals will be enormous, redefining our economy for the 21st century. Wisconsin has prospered under traditional endeavors such as manufacturing, agriculture, services and tourism, and those sectors will remain staples of the state economy for years to come. However, Wisconsin must also become home to more technology-driven businesses built around emerging clusters of excellence. This technology-based sector will add high-paying jobs to Wisconsin – and help other sectors remain competitive through innovation.

Wisconsin must build an infrastructure that supports business growth. The cornerstones of that infrastructure are the transportation system, the telecommunications system, energy reliability and the tax and regulatory structure. It is critical that Wisconsin create a sustainable vision to support the necessary changes and execute upon it. For without adaptive change, Wisconsin may well be left out of the emerging "Real-Time Economy."

HOW ARE WE DOING?

A recent scorecard on Wisconsin's economic health is like a school report card on an underachieving child: The grades are OK, but they could be a lot better with the right attitude and some smart homework.

The fifth annual "Measuring Success" scorecard by the Wisconsin Taxpayers Alliance and Competitive Wisconsin Inc. offered a holistic look at the state's economic well-being. The scorecard measured 32 specific areas within six broad categories – economic health, quality of life, workforce excellence, public sector, business climate and environmental quality. In each area, the performance of Wisconsin was compared with past years and with other states in the region.

Not surprisingly, Wisconsin scores well when it comes to quality of life. Health insurance coverage penetration is high and rising; crime rates are low and falling; the cost of living here is affordable and becoming more so. The state also fares well in some key workforce excellence categories, such as student test scores. Also, the state has competitive energy rates – which some businesses covet more than lower taxes – and well-maintained highways that exceed the U.S. average.

In categories that will define Wisconsin's "Real-Time Economy" growth, however, the state takes a seat in the bottom half of the class.

Income per capita: This is a measure of wages, dividends and interest, rental income and government payments. In 2001, the last year for which complete figures are available, Wisconsin's per capita income was $29,270, about $1,200 (3.9 percent) below the U.S. average of $30,472. In the five-state region, only Iowa was lower than Wisconsin. Minnesota, a New Economy state, was nearly $3,000 above the U.S. average.

Percentage of college graduates: An educated workforce is essential in a knowledge-based economy, and Wisconsin, surprisingly enough, lags behind the U.S. average. Nationally, 25.6 percent of adults 25 and older have a college degree; in Wisconsin, it's 23.8 percent. While often called the "brain drain" problem, that label is something of a misnomer. This is more accurately a problem of failing to attract "brains" that are educated in other states. Wisconsin does a reasonably good job of keeping its four-year college graduates and an even better job of retaining its technical college graduates. Where the state ranks low – among the bottom five – is in luring young people from other states and nations to Wisconsin. (Please see the report of the Human Capital Committee for more detail on how to close Wisconsin's human-capital gap.)

Doctoral degrees in the sciences: A state must have top-tier researchers in life science, engineering, computer science and mathematics to keep pace in research and development.

Wisconsin still exceeds the U.S. average in PhDs granted per million of population, but actual degrees granted has slipped from 457 in 1997 to 330 in 2001, a decline of 28 percent.

Return on federal dollars: If not for research grants captured by the UW-Madison and other institutions, Wisconsin might well be 50th in federal funding per capita. Wisconsin represents 1.9 percent of the U.S. population, but only 1.5 percent of all federal spending in the states. In 2001, Wisconsin received just 88 cents back for every $1 in federal taxes paid. That's 14th lowest in the nation. "Donor states" will find it hard to get ahead.

Exports: Wisconsin manufacturers cannot hope to sell all their goods and services in the state, the region or the nation. A global marketplace is essential. Yet the share of manufacturing, mining and farm production that is exported from Wisconsin (21.4 percent) is well below the U.S. average (35.9 percent) and trails all neighboring states except for Iowa. Wisconsin must produce goods and services that can compete globally.

Research and development spending: Private and public investments in R%D have consistently risen in Wisconsin as a share (1.7 percent) or gross state product, but still trail the U.S. average of 2.5 percent and lag behind three of four neighbors.

High-tech workers: Wisconsin has gradually been increasing the number of workers in technology fields, but only 2.8 percent of the workforce fits that description. That compares to 5 percent nationally and 6 percent in Minnesota. It's a major reason why Wisconsin is below the U.S. average in per capita income.

Venture capital: Although venture capital investments per worker have increased dramatically in Wisconsin over the past five years, the 2001 average of $33.02 is about one-sixth the Minnesota average and one-fifth the Illinois metric. With venture and angel capital, start-up companies find it difficult to survive, grow and create jobs.

Patents issued and new companies formed: Wisconsin performed well in these "Real-time Economy" indicators. But other scores show that much work remains if the state is to remake its economy. It needs more venture capital, better-educated workers and more technology jobs in order to close the income gap. Those quality of life rankings will be the next to fall if the state fails.

These Real-Time Economy indicators are vital because Wisconsin is lagging in some more traditional economic rankings. For example, the loss of manufacturing jobs in Wisconsin has been significant. However, advanced technology and a stronger infrastructure can play a part in rebuilding one of Wisconsin's bread-and-butter economic sectors.

MANUFACTURING AS A MICROCOSM: THE PROBLEM AND THE PROMISE

The current state of Wisconsin manufacturing is instructive because it clearly illustrates the challenges facing state businesses – and the opportunities.

Wisconsin continues to have one of the largest percentages of manufacturing workers (about 21 percent) of any state workforce in the United States. But these are challenging times in the

manufacturing sector, with states that are heavily dependent on manufacturing losing jobs they gained in the 1990s. For the workers who fill those jobs, it has created a new dynamic.

As the Wall Street Journal reported recently, “What once took two weeks and a dozen workers now takes two people only a few hours. Jobs once considered a lifetime commitment are now more temporary, forcing workers to stay adaptable. Many of them move from one factory or plant to another, from day shift to nights to keep up with changing demands. Far fewer belong to unions and far more take mid-career classes to keep up with the latest (technologies).”

Automation and globalization have reshaped many jobs -- and eliminated many more. About 10,000 manufacturing jobs have been lost in Wisconsin since mid-2000. Overcapacity, global competition and rising labor costs make manufacturing work particularly vulnerable to global boom-and-bust cycles. Those cycles have whittled away the promise of security that characterized blue-collar life.

But there’s some promising news, too.

Today's blue-collar jobs are generally safer, more challenging and better paid than they were even a generation ago, although the pace of wage increases has slowed and benefits are eroding.

The Wall Street Journal reported that manufacturing jobs averaged $54,000 in total compensation in 2000, 20 percent higher than the average of all American workers. Although the percentage of the U.S. work force in manufacturing has dropped significantly since 1950, the actual number of jobs in the sector is the same as it was then -- roughly 16 million -- and these workers are doing far more than ever before. Manufacturing output soared 47 percent during the past decade and productivity grew two to three times as fast as the overall economy from 1973 to 2000.

That demonstrates manufacturing's ability to keep reinventing itself – both for survival and to meet the world's ever-growing appetite for more and better products. Manufacturing accounts for more than 90 percent of all U.S. patent approvals from 1963 to 2000, which shows the value of technology to the sector. Skilled workers will continue to be important to manufacturing, too. Nationwide, about 42 percent of manufacturers say they face a serious shortage of highly skilled machinists and craft workers. One study shows that 10 million new skilled workers will be needed by 2020 as many retire and few enter the field.

The future of manufacturing in Wisconsin is linked to the adoption of new technologies, processes and business practices. Technology advances are not confined to the biotech laboratories; they are being put into use every day to keep American manufacturers globally competitive.

The push to create a tech-driven economy for Wisconsin does not mean turning our backs on manufacturing, which provides hundreds of thousands of jobs and some of the highest wages in the state. On the contrary, it means leveraging the latest in industrial and systems technology to keep those jobs at home. A generation ago, Milwaukee was known as the tool maker to the world. Today, it aspires to be the systems maker to the world, supplying the high-end parts and networks needed by today’s manufacturers.

Wisconsin has a tradition of manufacturing excellence. It also has a tradition of educating workers who can adapt to changing times. If Wisconsin acts now to retool its industries and its schools, it can compete in a changing world. There is more to the equation, however. Wisconsin must build an infrastructure that supports business growth. The cornerstones of that infrastructure are the transportation system, the telecommunications system, energy reliability and the tax and regulatory structure.

TRANSPORTATION

Wisconsin's traditional economy has grown and profited by the fact that our state has invested heavily in transportation. The dairy industry would never have risen to be No. 1 in the nation if not for the construction of a farm-to-market road system that allowed farmers and cooperatives to speed milk, cheese and butter to the grocery shelves. Milwaukee would not have become one of the manufacturing centers of the nation if not for the construction of highway, freight rail and shipping networks that carried our products throughout the United States and the world.

In the Real-Time Economy, much of the intellectual "product" can travel via the Internet. However, the people who create that product cannot travel through cyberspace. That is why Wisconsin must focus on building a transportation system that suits the state's 21st century needs.

A frequent complaint about Wisconsin airline service, especially by business travelers to and from the East and West Coasts, is that it's not a "direct flight" state. That lament may be more perception than fact, but there is still every reason for Wisconsin to work for improved air links so that it is more directly connected to the global economy. For example, the rise of Austin, Texas, as a high-tech city was due in at least some part to the fact that it was able to secure non-stop flights to San Francisco and Boston by negotiating a business relationship with American Airlines.

General Mitchell International Airport in Milwaukee is an example of how the facts do not support the perception that Wisconsin is inaccessible. This airport, operated by Milwaukee County, is served by 14 airlines that offer about 220 daily departures and a like number of arrivals. About 90 cities are served nonstop or direct from Mitchell. From Milwaukee, it's about 90 minutes by car to Madison.

Dane County Regional Airport (DCRA) in Madison, while growing, offers less in terms of direct and nonstop flights to major business hubs. It is served largely by commuter airlines with links to major carriers. Chicago, Milwaukee, Minneapolis, Detroit and Cincinnati are the major non-stop destinations served from Madison. About 100 flights depart from or arrive at DCRA each day, mostly through those larger hubs. However, the top eight passenger markets out of Dane County account for about 30 percent of the airport's total traffic. Those destinations, in order, are: Washington, D.C.; New York; Minneapolis/St. Paul; Orlando; Detroit; Denver; Boston and San Francisco. Six of the eight are major technology or finance centers. That indicates there is demand for more direct service.

Recommendation:

The long-term success of Midwest Airlines is crucial to Wisconsin's commercial air service. The Wisconsin Technology Council supports the airline's efforts to restructure itself in a way that will ensure its survival and eventual profitability. The Wisconsin Technology Council also supports examining a business arrangement by which corporations, government and other institutions that use the DCRA could "guarantee" purchase of a set number of air tickets in return for an airline guarantee to establish a direct or nonstop flight. Such a buying consortium would tap the power of the market.

Establishment of a high-speed rail network in the Upper Midwest would also go a long way toward bringing Wisconsin closer to global markets. The elements of a plan are falling into place. Amtrak, members of Congress, the Federal Railroad Administration and nine states are working on a compact that would serve as a framework for managing the system. In the 2002 federal transportation appropriations bill, $2.5 million was earmarked for constructing a rail station at General Mitchell International Airport in Milwaukee.

Keys to the success of an advanced rail network are frequent service, convenient schedules and competitive travel times. An initial system based on the "Midwest Regional Rail Initiative" would serve all primary and secondary population centers. Trains would travel up to 110 miles per hour on primary corridors. Frequencies and speeds could be increased as the network gains ridership.

Another initiative of importance is the expansion of Metra North service from the Chicago area into downtown Milwaukee. The projected cost to develop the service is $152 million. It is expected to cost another $10.4 million a year to operate. When compared to the projected cost of $6 billion for additional lanes along 127 miles of the interstate system, the expansion of Metra North is a cost-effective alternative. The expansion of the North Central line will be a great boon not only for southeastern Wisconsin businesses – allowing them greater access to the Chicago market and employees – but could allow for Chicago employees to quickly and affordably commute daily from Milwaukee. As such, the Wisconsin Technology Council endorses this project.

Recommendation:

The creation of interstate and intra-city rail initiatives would represent a redirection of transportation dollars, and would likely be seen as competing with other transportation systems, especially highways. However, Wisconsin has invested heavily in its highway system and will continue to maintain it at high-quality levels. The Wisconsin Technology Council believes the state should set new transportation priorities that include a high-speed rail system that serves the entire I-Q Corridor. It would reap significant economic returns for Wisconsin and the region.

TELECOMMUNICATIONS

Wisconsin is still a state of small towns and rural communities. Some of these areas lack the critical mass of people, institutions and capital to easily attract high-tech businesses. But that does not mean they are bereft of assets. Rural communities and small cities can offer a quality of life that is attractive to many workers. They can supply highly motivated workers with a commitment to quality. They can offer lower business costs for land and construction.

For rural Wisconsin to prosper in the Real-Time Economy, however, it must fully participate in the global communications revolution. The Bayfield-based Ten Rivers consortium is speeding that revolution.

The Ten Rivers group wants northern Wisconsin to become home to a cluster of technology companies dedicated to the business of "knowledge sharing," which is a general term for distance learning, e-training, online government regulation and licensing, and the development of training, sales and management software for businesses ranging from health care to transportation.

There is no research university in the Ten Rivers region to draw federal or private dollars, but there are a number of educational institutions that collectively offer what is needed for continuing education. There is no venture capital in the region, but high-net worth individuals involved in Ten Rivers have provided some seed capital of their own and are tapping into other networks, corporate investors and economic development groups such as Minnesota's Iron Range Resource and Rehabilitation Board.

Ten Rivers organizers realize the region's best asset is not timber -- but people. The consortium is convinced the foundation for a strong workforce already exists and that more skilled technology workers born in northwest Wisconsin can be persuaded to come home over time. The lure will be jobs built around high-speed communications technology.

Can all parts of Wisconsin, urban and rural, gain access to broadband, wireless and other telecom services? The Federal Communications Commission appears to have tossed much of the problem back to the states, including Wisconsin.

In a split vote earlier this year, the FCC largely left in place rules that are meant to foster local telephone competition by requiring the four regional Bell companies – including SBC, which serves much of Wisconsin – to lease their local networks to their rivals at low prices set by state regulators. Critics say that will severely crimp fiber-optics investment by SBC and its brethren, who are tired of building infrastructure that its competitors can lease at a steep discount. Supporters say the FCC order will enhance competition for local service.

In another part of its order, the FCC relieved the Big Four of their obligations to give rivals low-cost access to many of the key elements of their high-speed Internet networks.
Supporters say deregulation may be the fastest way to extend "broadband" service to hard-to-reach areas, such as rural Wisconsin. Critics say it will boost high-speed Internet prices by limiting choice.

Realistically, it's hard to predict how this ruling will affect Wisconsin consumers. The results could depend on state Public Service Commission interpretations yet to be made, lawsuits yet

to be filed, and high-stakes lobbying campaigns yet to be launched. But one thing is already clear: The FCC has shifted the unending and incredibly costly telephone wars back to the states.

"The nation will now embark on 51 major state proceedings to evaluate what elements of (telecom) service will be unbundled and made available to the competitive local exchange carriers," said FCC chairman Michael Powell, who became the first agency chairman since 1991 to vote against a ruling passed by the full commission. "These decisions will be litigated through 51 different federal district courts. These 51 cases will likely be decided in multiple ways – some upholding the state, some overturning the state with little chance of regulatory and legal harmony among them at the end of the day."

The U.S. Constitution requires that interstate commerce not become a patchwork quilt of regulations that impede the flow of goods and services. If the scenario painted by the FCC's Powell becomes reality, telecom service in the United States could become almost Third World in its inefficiency.

Then again, that assumes that technology will stand still – and it will not. Already, people are getting local and long-distance voice and data service in ways that didn't really exist 10 years ago. Wireless communications has grown by leaps and bounds, as have Internet-based telephone companies. About 3 percent of telephone users nationally say their cell phone is their primary phone. One Internet-based provider, Cox Communications, has 718,000 voice subscribers – up 58 percent from a year ago. Cable television has long been a provider of a variety of communications services. An announcement by SBC about expanded broadband availability in rural Wisconsin is pending. And is it fanciful to imagine the day when electric and gas utility companies, which run wires and pipes into virtually every home, use their financial clout and service reputation to get into the telecom business?

Recommendations:

The FCC ruling has put more pressure on the state PSC to innovate. The Wisconsin Technology Council encourages the PSC to envision a fully competitive local, long-distance and data telecom system that creates appropriate incentives to invest in new technology that will reach all parts of Wisconsin – thus spurring economic development.

The Wisconsin Technology Council also recommends that state government re-examine its multiple data, voice and video networks, and consider replacing that network with a system that would dramatically increase capacity and flexibility for all agencies.

Finally, the Wisconsin Technology Council recommends that state policymakers consider leveraging one of our biggest economic clusters – education – through technology that will make the state a leader in national and global digital learning.

ENERGY

The only thing standing between Wisconsin and periodic shortages of electrical power is our sluggish economy. If more people were working and businesses were operating near peak capacity, as they were in the late 1990s, the state could expect to spend much of the summer of 2003 on the verge of brownouts.

If the economy comes roaring back, there might not be enough reliable electricity to sustain it. Even with aggressive conservation and efficiency measures, the demand for electricity will grow in Wisconsin by at least 2 percent per year; the growth rate was 3 percent per year during the 1990s.

That's why it falls to policymakers – and citizens – to weigh carefully the effects of "not in my backyard" responses to proposals to add to Wisconsin's generation or transmission capacity. If we keep saying "no" to everything, the day will eventually come when Wisconsin runs short of electrical power for its homes, schools and businesses.

A recent example of opposition to a well-designed project came in Madison, where Madison Gas & Electric Co. has proposed to build a 150-megawatt power plant on the UW-Madison campus, which hugs the shore of Lake Mendota between Downtown Madison and the city's near West Side.

The $180-million plant natural gas fueled plant proposed by MGE in partnership with the UW-Madison would be a cogeneration unit. It would provide steam and chilled water to heat and cool campus buildings, as well as generate enough electricity to light 75,000 to 150,000 homes. It would have a net efficiency of 70 percent – twice that of a typical power plant – by making the most effective use of fuel. Because it would burn natural gas, it would produce far less "greenhouse gases" than a coal-fired plant and would immediately become one of the cleanest plants in Wisconsin. Nitrogen oxide emissions would be reduced 80 percent compared to a typical plant, and carbon dioxide by 15 percent. It also makes best use of existing power transmission lines, which means no new lines leading into the city from rural areas.

UW-Madison Chancellor John Wiley says the plant, which would be built next to an existing plant, is "critical" for the university's $320 million BioStar project. As part of BioStar, construction began last year on an addition to the UW Biotechnology Building, 425 Henry Mall. Plans also call for a Microbial Sciences building, an addition to the Biochemistry building and a new Interdisciplinary Life Sciences building to be completed over the next eight years. Without the plant, the campus would not have enough chilled water to cool those facilities or comply with air flow regulations in laboratories.

There were several concerns about the project. Some environmentalists were worried about the draw on water from Lake Mendota and how that might harm the Yahara River, which winds through Madison-area lakes. Some critics said the plant is too big to serve the UW-Madison's needs alone, and suggested it should produce no more than 40 or 50 megawatts of power. And some neighbors worried about air quality and noise pollution, even though the plant will be significantly cleaner and quieter than existing power plants on campus. Those problems are close to being resolved.

The debate over the MGE plant in Madison exemplifies what's wrong with energy planning in Wisconsin. If a plant this clean and efficient can't be built, what will the public accept? If people don't want to build new power plants next to old ones, where should they be built? If they don't want "urban" plants, are they willing to accept plants built on rural or suburban greenfields, and the new transmission lines that would come with them?

Wisconsin is running out of options. Either it accepts reasonable proposals to add electrical power generating capacity, or it could easily run short on power during the hot summers to come. The latter option is unacceptable – unless Wisconsin wants a permanently crippled economy.

Too many conversations about Wisconsin's energy future end with environmentalists pointing fingers and utility executives or their customers complaining that science and reality have been disregarded. Two recent forums have charted a different and more constructive path.

1. *The Wisconsin Environmental Initiative*

The Wisconsin Environmental Initiative has issued a 30-page report that shows it is possible for Wisconsin to have abundant supplies of electricity without sacrificing quality of life or relying on polluting technology. The report is a roadmap for state policymakers. Written by a mix of environmental and industry leaders, the WEI report aims toward a balanced solution – and recognizes that reliable energy is essential for economic growth.

"Our aging energy infrastructure needs to be upgraded and enhanced in order to provide energy reliably, reduce the overall environmental footprint of the energy system, and take advantage of gains to be through improved energy efficiency," the report's executive summary said. "In addition, an improved energy infrastructure is necessary for attracting businesses that will keep our economy strong and continue to provide quality jobs."

Can that be accomplished in a world in which more energy has traditionally meant more pollution? The WEI Energy Forum offered six goals – and backed each with specific examples of what's being done today in Wisconsin and elsewhere. Participants want to:

1. Reduce energy demand through efficiency and conservation.
2. Develop a "dynamic" and inclusive long-term energy planning process.
3. Support education and research on energy and the environment, with the goal of reaching out to businesses, communities and the general public.
4. Increase investment in renewable energy technologies.
5. Support market transformation efforts.
6. Value a balanced approach and diverse energy investments.

Forum participants identified many ways to increase energy efficiency through tax, financial and regulatory incentives, as well as new measures for buildings, processes and supply chain management. "Green Building" tax credits for efficient new construction is one such incentive. Streamlined building approval processes for contractors how build "green" is another.

The report cited many Wisconsin examples of companies improving energy efficiency – and their bottoms lines. West Bend Mutual Insurance Co.'s new headquarters reduced energy consumption by 40 percent per square foot with a corresponding 7 percent increase in employee productivity, comfort and air quality. The Johnson Controls Brengel Technology Center in Milwaukee was one of the first 12 buildings in the world to earn the Leadership in Energy and Environmental Design certification by using cost-effective techniques to save energy and water while improving indoor air quality. Efforts by Don Simon Homes, QuadGraphics, Miller Brewing Co. and Orion Lighting are also highlighted in the report (available through www.wi-ei.org).

The report also cites the construction of geothermal schools in Evansville and Fond du Lac, a comprehensive program that has reduced University of Wisconsin and state government energy costs by $7.3 million per year, and a variety of public education efforts to show citizens how saving energy also saves money.

Specific ways to increase investment in renewable energy technologies, such as biomass and solar photovoltaic generators, include removing barriers such as utility interconnection standards, inconsistent zoning laws and other local laws that make it tough to try anything new. "Green pricing" programs – such as those already run by We Energies, Alliant, Madison Gas & Electric and Wisconsin Public Power Inc. – give customers the option of paying a premium on their bill to support renewable energy projects.

Ways to transform the market include instituting "real-time pricing," which allows customers to take advantage of lower prices during low-use periods of the day, and increasing the diversity of distributed generation. Distributed generation is characterized by decentralized, smaller-scale energy sources located close to the point of use.

Finally, the report urged creation of "super-reliable, high-quality power" to attract biotechnology, micro-processing and other New Economy industries. That included development of hydrogen fuel cells – currently ignored by state policy – and highly efficient "cogeneration" plants, such as the plant proposed by MGE for the UW-Madison campus.

In summary, the WEI "Energy Forum" report can help end Wisconsin's energy wars by blending efficiency and conservation efforts with new technology, systems and market realities.

2. "Energy Policy and Global Climate Change – A Path Forward," sponsored by Alliant Energy and the Natural Resources Defense Council.

This April 15 conference in Madison focused on bringing reasonable and committed people together to discuss the issue of global climate change. There is no longer a reasonable question about whether Earth is warming; in fact, most scientists believe global climate change is already a fact of 21st century life. The real debates are over how much damage will come to our steadily warmer world – and what should be done to slow or reverse the inexorable trend.

The conference produced disagreements on the merits of mandatory controls versus voluntary actions by manufacturers and utilities. Likewise, opinions ranged on the value of the Kyoto Protocol to the United Nations Framework Convention on Global Climate Change. Even

those scientists who agreed Industrial Age human activities have warmed Earth were uncertain as to whether the effects will be catastrophic to all species or merely annoying to polar bears and beachfront property owners. But there was consensus around one topic: The value of technology in helping to reverse the trends of "global warming."

Virtually every speaker talked about the promise of technology – and how far too little money is being invested in unlocking its potential. Many industries spend 10 percent or more of their net sales on research and development; the energy industry spends about three-tenths of 1 percent. As one national speaker noted, "The dog food industry no doubt runs well ahead of us (in R&D investments)."

Discussions ranged from a reconsideration of electrical power from the latest generation of nuclear power plants, which have no greenhouse emissions, to the rise of the "hydrogen economy." There was also praise for technology used in cogeneration as well as more efficient homes, businesses and appliances.

A story told by Ralph Cavanagh of the Natural Resources Defense Council summarized how technology, market incentives and the right policy can produce results. Cavanagh said today's refrigerators use about one-quarter as much power as those produced in the 1970s because of continuous improvements in technology, the setting of minimum energy standards and the creation of incentives. Those same elements – technology, incentives and a policy nudge – can help keep the lights on in Wisconsin while providing environmental gain.

Recommendations:

Without a rational approach to meeting the state's energy needs, Wisconsin will be hampered in its bid to grow its economy. That especially includes emerging high-tech businesses, which require high-quality, reliable electricity.

The Wisconsin Technology Council recommends that a full and fair debate continue over the "Power the Future" proposal of We Energies, which would primarily serve southeast Wisconsin. The debate should focus on whether the cleaner-coal technology being offered by We Energies is reliable, cost-effective and capable of making environmental progress rather than simply meeting minimum standards. At the same time, citizens and policymakers must ask themselves whether generation plants fired by natural gas will be subject to long-term price spikes, and whether Wisconsin's moratorium on the construction on new nuclear power plants should be reconsidered in conjunction with the opening of a national nuclear waste repository.

The Wisconsin Technology Council also recommends continued progress on the location of the Arrowhead-Weston transmission line, which would link Wisconsin to hydroelectric power from Canada via Minnesota. Wisconsin is dramatically underserved by interstate transmission lines compared to its neighbors, to the point that reliability could be threatened during times of heavy electricity use.

TAXES

The Wisconsin Legislature has sent Gov. Jim Doyle a two-year state budget that fulfilled his campaign pledge of no increases in state general fund taxes. That is a major step in the right direction. The combined state and local government tax burden in Wisconsin is already the third highest in the nation, measured per capita. Raising taxes would have only discouraged economic growth – and growth is the best way to naturally increase government revenues. New taxes would have prolonged the economic slump in Wisconsin after recovery begins nationwide. By avoiding new taxes at a time when other states raised taxes, Wisconsin may drop down the list of the top 10 taxing states.

The work of reforming Wisconsin's tax system is far from over, however. Only a particularly robust economic recovery in 2003-2005 will generate enough revenue to erase Wisconsin government's "structural deficit," which describes expenditures committed in one budget cycle but paid for in the next.

Recommendations:

Here are tax initiatives the Wisconsin Technology Council believes would spur development of high-growth, high-wage businesses:

- Abolish Wisconsin's formula for taxing multi-state businesses based on payroll, property and sales and move to a "single factor" that calculates taxes only on sales of goods and services. This would encourage more corporations to locate in Wisconsin, stop penalizing them for creating jobs and help reverse the current trend of corporate headquarters leaving the state. The Legislative Fiscal Bureau has reported the change would cut corporate income taxes by $70 million, but it is projected that government will recoup $51 million as businesses expand. A study by the University of Chicago reports that the change could create up to 18,000 manufacturing jobs, and 49,000 non-manufacturing jobs.
- Amend the tax credit incentive in the state's Technology Zones program to allow high-tech start-up companies to "trade" their credits to larger companies. Few high-tech startups are profitable, which means they cannot take advantage of tax credits on their net income. However, if tech startups are allowed to sell their credits to larger companies, the startups can receive cash – and possibly some sales opportunities.
- Ensure that Wisconsin sales tax policy does not discourage companies that successfully compete for federal contract revenues. This issue affects high-tech companies such as Orbitec as well as manufacturers such as Oshkosh Trucks. At present, the state Department of Revenue has taken the position that property purchased for the federal government through a federal contract should be subject to state and local sales and use tax if the property is not actually transferred to a federal facility. In fact, federal exemption certificates are not being honored at the state level. At a time when Wisconsin ranks 49th among the 50 states in getting its fair share of federal spending, state tax policies should not discourage companies that bring home federal contracts that create jobs and wealth in Wisconsin.
- Adopt tax policies that encourage regional cooperation and the formation of regional economies, and change tax laws that pit one community against the next in the race for economic development. If fewer public dollars are expended on city-to-city

competition, businesses will be able to cluster in a way that promotes more rapid and efficient growth.

- Transform Wisconsin's tax system from one that relies on intergovernmental transfers to one that rests taxing authority with the units of government that actually spend the money. For example, 61 cents out of every $1 raised by state government is returned to local governments and local schools. It makes sense for the state to work toward providing a reasonably equitable education for every Wisconsin child. It does not make sense for Wisconsin to send state tax dollars to local governments to spend on trash collection or street cleaning, which are purely local responsibilities.
- Create incentives that would stem the tide of Wisconsin's "snow bird wealth flight." When Wisconsin workers retire, they sometimes relocate during the winter months in states with warmer climates – and warmer tax policies that entice them to become legal residents. The governor and the Legislature should examine options that would encourage Wisconsin retirees to keep their assets in Wisconsin and remain legal residents of the state.
- Please see the report of the Investment Capital Committee for other proposals related to changing Wisconsin's investment climate and for creating more incentives for venture capital and angel capital investment.

REGULATION

Without major regulatory reform, Wisconsin will continue to lose high-wage, technology-dependent manufacturing jobs to other states and countries.

Wisconsin has lost 66,000 high-wage manufacturing jobs in the past three years. Much of that loss is due to competition from states and nations that pay their workers much less, and Wisconsin should not engage in a race to the bottom.

However, Wisconsin can be its own worst enemy when it comes to posing regulatory hurdles to companies. A recent report by Wisconsin Manufacturers and Commerce, the largest business organization in Wisconsin, noted the following:

"There is no delicate way to put it – Wisconsin's regulatory climate is costing us good paying jobs and is an anvil around our neck as we try to swim out of the current economic doldrums. Our regulatory climate is not the result of any one regulatory scheme or agency, or for that matter, it is not the result of any one administration or legislature."

Wisconsin regulatory problems revealed in a WMC survey include:

- Companies and consultants with experience in other states found Wisconsin's regulatory climate more hostile toward business than any other state, including neighboring Midwest states and California.
- The inability to obtain timely permits was the single most significant regulatory impediment facing companies wishing to expand or locate in Wisconsin. Business opportunities have gone to other states because of the ability to provide regulatory approvals more quickly.

- Businesses are more concerned with the administration of the regulatory system than with the environmental standards themselves.
- The expanding scope of existing and creation of new "state only" rules puts Wisconsin at an economic disadvantage in an increasingly competitive marketplace.
- Agency staff who write permits and develop rules are not aware of, or are unconcerned about the business implications of their actions.

Recommendations:

- Expand and simplify permit exemptions, allow construction to begin pending permit application review, increase the use of "general" permits, and enforce specific permit approval deadlines.
- Require agencies assess the costs and benefits of their proposal, quantify the risks they are trying to address, and require costs generally be commensurate with benefits.
- Avoid general grants of rulemaking authority, clarify/strengthen policies as to when federal programs can be exceeded (both standards and procedures), and expand legislative review requirements.

CONCLUSION:

Wisconsin's long-term economic health will be determined in large part by the high-tech infrastructure the state creates today. That means improving transportation, telecommunications and energy systems, and creating a more incentive-based tax structure. The Wisconsin Technology Council hopes these suggestions are helpful to Gov. Doyle and the Legislature as they consider strategies for growing Wisconsin's economy.

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