

Climate Change Script for China Presentation

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April 27, 2009

1.

Nations throughout the world are experiencing the devastating effects of the shortsighted energy policies of the international community, including poor local air quality, with its significant impacts on health, tourism, and economic growth; the warming of our planet, due in large part to the burning of fossil fuels; food and water shortages; more intense destructive weather events such as hurricanes; the greater spread of disease; increasing risk of international conflicts over rapidly diminishing resources; and wildly fluctuating fuel prices. Either we delay and wait for others to take action, with disastrous results, or we pull together as an international community at all levels of government, in business, and in each of our individual lives, to develop and implement effective solutions. Developing and implementing solutions to these serious problems is at the core of real leadership.

2.

I served for eight years as Mayor of Salt Lake City, the largest city in a metropolitan area of 1.5 million people. Our economy is primarily service oriented, with government accounting for 21% of employment; trade, transportation, and utilities accounting for 18%; professional and business services accounting for another 18%, and health and health education services accounting for 10%. Our city is the largest industrial banking center in the U.S., and is known as the “Crossroads of the West” due to its central location in the geography of the western United States. Due to the mountains surrounding Salt Lake City, as well as the widespread local dependence on automotive transportation, we have one of the worst air quality rankings in the United States. Furthermore, almost all of our electricity is generated by coal-fired power plants.

3.

Energy policies that rely on coal, oil, and gas, which provide the majority of energy in the United States and China, pose enormous threats to both of our nations. Under my leadership of Salt Lake City government, we responded to the threats posed by fossil fuel dependence by greatly increased energy efficiency and the use of clean, renewable sources of fuel. Numerous national and international organizations have recognized our efforts, regarding which we presented in cities and countries throughout the world. Among other significant honors, we received the World Leadership Award in London for our environmental programs, the International Leadership Award from the Association for Commuter Transportation, and the Climate Protection Award from the U.S. Environmental Protection Agency. I am pleased to have the opportunity to share our experiences regarding energy policy with you, and to discuss with you the energy challenges we all face in our local communities. I also am pleased to be able to share effective solutions that can be implemented in your cities to reduce a dangerous dependence on highly polluting sources of fuel, and improve the quality of life of your citizens. Finally, I hope

to hear from you about your experiences, successes, and innovations in the area of energy policy.

4.

As Mayor of Salt Lake City, and now as President of High Road for Human Rights, our focus has been on finding the most effective solutions to our most pressing challenges and on taking advantage of the tremendous positive opportunities currently available to improve local air quality, reduce global warming pollutants, enhance public health, gain independence from foreign oil, enhance national security, and avoid destabilizing fuel price fluctuations. These challenges and opportunities all converge at the point of the same two fundamental solutions: First, conservation and greater efficiencies. Second, utilization of clean, renewable sources for the energy we need.

3.

Poor local air quality is a problem facing many of our cities. Bad air days in Salt Lake City severely impact public health, recreational opportunities, sustainable economic development, and overall quality of life.

4.

Air quality has become a challenge in every large city and in many smaller cities throughout the world, including my birthplace, Logan, Utah. Every year, approximately one million people die prematurely from diseases caused by air pollution. Moreover, poor air quality is a major deterrent to tourism, which is a major source of economic development for many of our cities.

5.

We are able to inhabit the earth because of a delicate balance of heat-trapping gases in the atmosphere, which acts much like a blanket. Sun rays travel through the atmosphere to the Earth, where some of them are reflected back. The heat-trapping gases in the atmosphere capture some of the radiation and reflect it back to Earth. An accumulation of too many global warming gases adds immensely to the atmospheric blanket, causing dangerous global warming.

6.

The enormous increase in greenhouse gases has caused a very significant increase in average global temperatures. This trend spells catastrophe if we do not reverse it.

7.

The actual temperature increases since the late nineteenth century are shown here by the red line. Scientists predict that, if current trends continue, average global surface temperature could rise, under the best case scenario (which would still be disastrous) approximately 1 degree Fahrenheit

during the next 50 years and 2.5 degrees during the next 100 years, and, under the worst-case scenario, average temperatures could rise approximately 4 degrees Fahrenheit during the next 50 years and 10 degrees in the next century.

8.

A vast scientific consensus testifies to the reality and danger of disastrous climate disruption. The Intergovernmental Panel on Climate Change, or IPCC, was established in 1988 by the World Meteorological Organization and the United Nations Environment Program. It is the largest scientific collaboration in history, with over one thousand scientists from over 140 nations participating. The IPCC's recently released Fourth Assessment Report summary is the product of contributions from hundreds of scientists from the international community assessed by the world's leading experts on global warming. The report concludes that "Warming of the climate system is now unequivocal," and that human activities are to blame. The science academies of every nation that have commented on the issue, including the US National Academy of Sciences, agree: Global warming is occurring, it is occurring at a rapidly increasing rate, it is caused by human activities, and we can effectively prevent the worst results, but only if we act urgently in achieving massive reductions of greenhouse gas emissions.

9.

Rising ocean waters threaten the existence of coastal cities. A rise of up to one meter in sea level -- which has been predicted by the Intergovernmental Panel on Climate Change -- would submerge major coastal regions around the world, including several major metropolitan areas in the US; 17.5 percent of Bangladesh, in an area where 13 million people currently reside; and 1/3 of Shanghai, the population of which is also 13 million people.

10.

Continuing our present energy policies threatens major water supplies, both through the inundation of salty seawater from rising oceans, and through the melting of glaciers. Glaciers in the Himalayas and on the Tibet-Qinghai Plateau feed all the major rivers of Asia, including the Indus, Ganges, Mekong, Yangtze, and Yellow Rivers. Water from these rivers irrigates countless rice and wheat fields in China and surrounding nations. Glaciers on the Tibet-Qinghai Plateau that feed the Yellow and Yangtze rivers are melting at 7 percent a year. Yan Tandong, an eminent Chinese glaciologist, predicts that two-thirds of China's glaciers could be gone by 2060 if the world continues with the current energy policies and practices.

11.

In addition to the melting of glaciers, rising temperatures and more frequent droughts will also place greater strain on groundwater supplies. Water tables are now falling in countries that contain more than half the world's people, including the big three grain producers -- China, India, and the United States.

12.

Depleted water supplies, combined with drought and rising sea levels, will have serious impacts on food supplies. According to published reports, wheat farmers in China are now pumping water from a depth of 300 meters. The cost involved in this is so high that farmers are often forced to switch to much less productive dryland farming. From 1997-2005, the wheat harvest in China fell from 123 to 95 million tons, a drop of 23%. Nations such as China and the United States that are overpumping their aquifers will only see greater problems in the future from rising temperatures and sea levels if climate change is allowed to continue unchecked.

13.

All of this will result in national and international security problems of a massive scale. Influential Pentagon advisor Andrew Marshall commissioned a 2004 report, entitled “An Abrupt Climate Change Scenario and Its Implications for United States National Security.” The report predicts that abrupt climate change would produce extremely dangerous conditions in many regions of the planet as countries accelerate nuclear weapons development to defend and secure dwindling food, water, and energy supplies. Alarmingly, the report’s authors view climate change as a vastly greater threat to global stability than terrorism.

As the two largest importers of petroleum, tensions will dramatically increase between the United States and China if our nations continue to depend on fossil fuels for our primary sources of energy, because petroleum resources will become increasingly scarce as demand persists or increases. The U.S. and China cannot afford to come into conflict over energy, given the interconnectedness of our economies. The United States imports more of China’s goods than any other nation, while China holds the most U.S. Treasury securities of any country. To preserve the security of our nations and the international community, we must change course toward clean, renewable alternative sources of energy. Perhaps more than any other governmental entity, city governments have tremendous power and flexibility to implement energy policy changes and positively impact the quality of life of their citizens. Mayors have a crucial role and responsibility to address the dangers we face from our dependence on fossil fuels by improving energy efficiency and dramatically increasing the use of clean, renewable sources of fuel.

14.

Our focus when I was Mayor was on finding the most effective solutions to our most pressing challenges and taking advantage of the tremendous positive opportunities currently available to reduce local air pollution, curb global warming pollutants, enhance public health, gain independence from foreign oil, avoid destabilizing fuel price fluctuations, and improve national security.

15.

From the first days of my administration as Salt Lake City Mayor, I pledged to address effectively these pressing energy policy challenges to ensure our citizens would continue to enjoy the quality of life they deserve.

16.

With the help of the Salt Lake City Green Team, a diverse group of professionals and other interested community members we assembled from government, business, and advocacy groups, we initiated the Salt Lake City Green Program, perhaps the most comprehensive energy and environmental program in the country. The program covered everything from dog waste to nuclear waste.

17.

Our first step was to determine everything we could do, in every department of city government, to operate in a more environmentally sustainable fashion. We completed a sustainability inventory, cataloging our environmental and economic resources in every department and ascertaining the opportunities we had to make improvements in every area, including water, energy use, open spaces, transportation, waste (including toxic waste), and air quality.

18.

We implemented the Salt Lake City Green Program in three stages. First, we made municipal operations as efficient as possible. In addition to our commitment to address pressing energy and environmental challenges, we recognized our responsibility to the public to save tax dollars by reducing our energy consumption, and wanted to set a good example for the community. Second, we initiated the e2 Business Program to help businesses conserve resources and utilize alternative sources of fuel. Third, we instituted the e2 Citizens program for Salt Lake City residents, to raise awareness about the negative impacts of fossil fuel-based energy consumption, and give people the tools they need to take responsibility for and help address the tremendous energy challenges we face.

19.

One hundred fifty-seven nations, but not the United States and China, have signed on to the Kyoto agreement and are taking aggressive measures to reduce greenhouse gas emissions. The lack of leadership and meaningful action at the federal level in the United States to end our dangerous dependence on fossil fuels has meant that local governments have an even greater responsibility to address the threats our energy policies pose to the quality of life of our citizens. Recognizing our obligation and ability to take effective action, Salt Lake City has been committed to the Kyoto process. In 2002, on the eve of the Salt Lake Winter Olympic Games, I committed Salt Lake City, in its municipal operations, to at least the Kyoto goals. We set a goal to reduce emissions in our city operations by at least 21% below our 2001 baseline. We made tremendous progress in the reduction of greenhouse gas emissions. By 2006, we reduced emissions by 31% from our 2001 levels, attaining almost 150% of our goal--six years before the 2012 target date.

The important point here is: We have the means to combat catastrophic climate change resulting from global warming. Every city, every state, every nation, every business, and every individual can do its part in achieving meaningful, substantial reductions in greenhouse gas emissions. It's

going to take all of us, including especially our municipal leaders, working together to meet this tremendous challenge.

21.

We worked to create a “clean fleet” by converting our city’s fleet of vehicles, through right-sizing and using clean, alternative fuels. We got rid of 41 gas-guzzling Sport Utility Vehicles, and purchased smaller, more fuel-efficient cars. By the time I left office, we had 89 compressed natural gas vehicles in our fleet. We purchased five new 3-wheeled parking enforcement vehicles, like the one in the lower right hand photo here, which use one-eighth as much gas as the vehicles they replaced. The principle by which we operated was “The smaller, the better.” We even bought a new gas-electric hybrid police car shown here. We also passed an ordinance that allows drivers of low-polluting, high efficiency cars to park throughout the city without having to pay at parking meters.

Acting in our personal lives consistently with our publicly voiced values is, I believe, vital to good leadership. My personal car is a compressed natural gas vehicle, powered by the cleanest internal combustion engine made. It emits almost none of the pollutants that harm human health -- and I used to fill it from my gas line at home. Residential gas lines are not necessary, however, in Utah, where we have the second-largest number of gas stations with natural gas in the country. And the cost savings in the United States is enormous. Overall, however, the United States lacks the fuel delivery infrastructure to support the widespread use of natural gas cars or other alternative fuel vehicles.

22.

We replaced all our light bulbs in our city hall. By replacing the energy-wasteful incandescent bulbs with high-efficiency compact fluorescents, we saved over \$33,000 a year in electric bills -- and dramatically reduced the amount of electricity we used. If every household in the US replaced just one incandescent bulb with a compact fluorescent bulb, the emissions impact would be equivalent to taking one million cars off the road. Besides the greatly reduced emissions from coal-burning power plants that would result from wiser use of compact fluorescent bulbs, there are significant financial savings. With part of the money we saved from converting our lighting, we became the state’s largest purchaser of wind power. By taking these two simple measures, we saved taxpayers money and reduced CO2 emissions by over 1100 tons each year.

23.

Then we moved on to our traffic signals. By changing to low-energy LED traffic lights, we eliminated 500 tons of carbon dioxide emissions and saved \$50,000 in lower electrical costs.

24.

Salt Lake City teamed up with our local electric utility to promote the purchase of wind power. Getting people to switch from coal-burning production of electricity to clean renewable sources resulted in CO2 emissions reductions equivalent to keeping 2,700 cars off the road each year.

Even though people paid a little more for wind power, they were happy to do it because they knew they were contributing to our energy solutions.

25.

In 2001, Salt Lake City began offering a 90 gallon blue recycling bin to residences free of charge. People can put all recyclable materials except glass in the bins, so it is very easy and convenient. The materials are later segregated at a recycling plant. Since the launch of the “blue bin” program, the amount of material recycled in Salt Lake City has skyrocketed. To promote recycling of aluminum cans, we held a competition, asking young people to submit ideas for an advertisement to be produced and aired by a local television studio. Here is the winner.

26.

We know now that stopping the construction of coal burning power plants is crucial if we are to clean up our air, prevent catastrophic, irreversible global warming, and prevent pollution-related diseases. Coal mining is also an extremely hazardous activity for workers. Several major coal mining disasters have occurred in the United States in recent years—including a major mine collapse in my home state, Utah, that killed nine miners. In 2008, an average of nearly nine coal miners died every day in China in mining accidents.

27.

While I was mayor, we sought in many ways to convey the dangerous impacts of coal-burning power plants. As with some communities in Utah, numerous local economies in China, where coal-fired power plants are being built at the rate of one per day, currently depend on coal mining for jobs and economic growth. This makes discontinuing coal-fired power generation extremely challenging. However, given the scale of the threats our current fossil fuel dependence pose to our way of life, it is imperative that we act decisively to shift coal-dependent economies toward more sustainable bases of employment and growth.

Educating young people and getting them involved is crucial to solving the problems posed by coal-burning power plants. One campaign included assemblies at local high schools, where we handed out no-more-coal buttons. Following my brief presentation on climate change, I played guitar with some local young rock and rollers, performing some old rock classics with lyrics I had revised.

28.

Methane is a major global warming pollutant. Methane has 21 times the greenhouse effect as carbon dioxide. At our wastewater treatment plant, we capture the methane and utilize it to fuel a cogeneration facility, which produces about 6 million kilowatts of electricity per year, about one-half of the energy requirements for the plant. This results in a reduction of the greenhouse equivalent of 13,600 tons of CO₂ each year. Also, methane at our landfill has, in the past, been

captured and simply flared. Now, the methane is used to provide electricity to a neighboring municipal energy provider, meaning less electricity that has to be generated at a coal-burning power plant.

29.

US consumers spend an astounding \$11 billion on bottled water every year. Bottled water costs more than an equivalent amount of premium gasoline. It is the height of mindless consumerism. In 2006, simply manufacturing the bottles to meet this demand—leaving aside the massive energy costs in transporting the bottles to market—generated more than 2.5 billion tons of global warming pollution. To address the tremendous waste in energy and materials required to produce and distribute bottled water, I signed an executive order prohibiting the purchase of bottled water by Salt Lake City government departments. In collaboration with Utah’s premier restaurant group, we launched the Knock Out Bottled Water Campaign. The campaign encouraged citizens and businesses to consume our city’s high quality tap water--ranked first in a national taste test -- rather than consuming bottled water. While ceasing consumption of bottled water poses few problems in the United States, where we have good water quality, many communities throughout the world lack clean water. Improving water quality in these regions is an integral part of any effective campaign to discontinue the production and distribution of bottled water.

30.

The disastrous consequences of pursuing our current, failed transportation model of fossil fuel dependence present us with vitally important choices: Do we pursue policies that promote sprawl, dependence on the automobile, traffic congestion, air pollution and global warming, or do we pursue cleaner air, preservation of open spaces, reduced burning of fossil fuels, and greater transportation opportunities through mass transit?

31.

We faced tremendous opposition to an initial north-south light rail line in Salt Lake County before it opened at the end of 1999. Here is a headline reflecting a call for our transit director’s termination because he had the audacity to advocate for a light rail system.

32.

Just two months before I took office, the Salt Lake City Council voted to kill an east-west light rail line running from Downtown to the University of Utah. The Chair of the Salt Lake City Council, addressing other public officials through the media, was firmly opposed to even discussing the matter further. “Don’t waste your time calling me,” he said, “because the answer’s going to be no.”

33.

While still mayor-elect, I worked to bring members of the City Council, staffers from the outgoing Mayor’s administration, and officials from the Utah Department of Transportation and

the Utah Transit Authority, along with residents, business owner, and the President of the University of Utah, together to resolve objections and develop solutions that would enable this crucial project to move forward. Through frank discussion, negotiation, and compromise, we developed a better plan that was more cost-effective than what had originally been proposed. Just one month after the Council had declared the project dead, the Council voted unanimously to approve the construction of the line.

34.

Our success in making possible the construction of the east-west light rail line in Salt Lake City, which connected our downtown to the University of Utah, spurred other city, county, and state leaders to initiate plans for a regional transit system. Today, the light rail system has expanded to 19 miles, with more to come in the future, including a partially constructed heavy-rail commuter system that will eventually connect cities and towns along a 100-mile corridor.

35.

Ridership of our light rail system has far exceeded even the most optimistic projections. Success is breeding more success, as those who once adamantly opposed light rail are now clamoring for it in their communities. In four of the most conservative counties on the planet, voters actually voted for a sales tax increase for transit—a result of the success of our initial system.

36.

We live in the second-driest state in the Union, and face an additional challenge in that Salt Lake City has, as a percentage of population, one of the largest daily commuter influxes of any city in the country. Despite these challenges, Salt Lake City reduced its water use under my administration by nearly 15% from 2000 to 2006. We accomplished this goal through extensive educational outreach and through the introduction of a tiered rate system for water consumption, which provided an enhanced financial incentive for residents to conserve water. We also developed and implemented an ordinance allowing drought-tolerant landscaping, which requires far less watering and is far more interesting to the eye than the non-native turf grass that had been required by City Code.

37.

As part of our Salt Lake City Green program, we encourage all sorts of alternative forms of transportation as a means to reduce the negative effects of consuming fossil fuels. As is far more widely understood in China than in the United States, bicycling improves personal health and helps create a vibrant community. With the use of bicycles across the US, and from Belgium to Torino, Italy, we delivered a message of peace, youth, and the environment to our successor as the host of the Winter Olympic Games, without the use of any fossil fuels. We have translated and distributed this statement to you, which articulates the key principles and goals of the Salt Lake City Green Program as well as the human rights implications of climate change and other threats to peace, stability, and justice around the world.

38.

As this sign reminds us, bicycling doesn't require the burning of fossil fuels. We're committed to creating a bicycle friendly community and have added several miles of bicycle lanes in recent years and installed 45 new bike racks in our downtown area.

39.

We took many additional steps to encourage cycling as a safe, convenient, and energy saving mode of transportation in Salt Lake City. We initiated the planning and development of a Bicycle Transit Center at our central station, the Intermodal Hub, to provide key resources and information to cyclists. We also developed and secured passage of a Complete Streets Ordinance, which requires city government transportation planning to ensure that street construction or renovation projects allow for the safety and convenience of all users: cyclists, pedestrians, and motorists.

40.

Committed to smart growth principles, which promote energy conservation, Salt Lake City looks far into the future to plan our city in ways that promote walkable and transit-oriented communities, rather than energy-wasteful suburban development and sprawl. Many people in the United States resist greater residential density in their neighborhoods, but when it is well designed and close to transit, greater density can help make a community more attractive, safe, and environmentally sustainable.

I fought against new roads and highways every chance I had. My administration took a transit-first approach to all development projects, including opposition to highways pushed by state legislators, so that future growth will not be accompanied by more automobile congestion, more roads, less open space, greater dependence on foreign oil, and increased pollution, but with public transit opportunities afforded by rapid bus systems, light rail, and commuter rail, as well as cleaner air, the preservation of open spaces, less traffic congestion, and greater energy independence. All of that translates into better public health, better sustained economic development, better quality of life for all, and greater national security.

41.

In addition to enacting policy measures to promote environmentally sustainable, energy conscious smart growth, my administration fought long, hard battles to prevent sprawl-inducing projects in our city and region. One was the so-called Grand Mall—which we referred to as the “sprawl mall”—proposed for the west side of the city, far from any existing development. The sprawl mall would have greatly increased automobile traffic--negatively impacting air quality, decreasing our quality of life, and furthering our dangerous dependence on fossil fuels. After a difficult battle against some of the most powerful developers in our city—a battle that included disqualifying a member of our City Council from voting on the grounds that he had a conflict of interest with respect to the project—we successfully stopped the sprawl mall project.

42.

I also joined a lawsuit to prevent the construction of the Legacy Highway north of Salt Lake City, which was supported by Utah's then-governor and the Utah Legislature. As has been observed in the United States since at least the 1940's, road and highway construction initially increases the convenience of automobile travel, creating an incentive for people to use polluting automobiles rather than transit for their transportation needs. As more and more people are encouraged to use automobiles as a result of new highway construction, however, congestion actually increases, defeating the purpose of building the new highway, and further degrading the environment and quality of life. In our lawsuit, we described the harm that would result from the construction of the highway as it was originally proposed, including poor air quality, destruction of critical wetlands, increased congestion in Salt Lake City, and, of course, greater consumption of and dependence on fossil-based fuels. Our lawsuit resulted in a compromise in which a smaller, vastly improved parkway was built with a reduced impact on valuable wetlands, air quality, and sprawl-inducing automobile travel.

43.

The U.S. Green Building Council's Leadership in Energy and Environmental Design --known as LEED -- rating system promotes construction of buildings designed for energy and water conservation, material reuse, and improved user comfort and productivity. My administration guided the Intermodal Transportation Hub, the first LEED-certified building constructed by Salt Lake City government, to successful completion. The Hub connects light rail, buses, cabs, bicycles and commuter rail in downtown Salt Lake City, which greatly fosters the use of alternative transportation.

44.

In addition to our focus on reducing greenhouse gas emissions and increasing energy efficiency through the promotion of clean, renewable electricity, smart growth, and transit-oriented development, Salt Lake City was the first city in the nation to voluntarily offset all the carbon dioxide emissions from City government-related air travel by preserving rain forest in Costa Rica. With each airline ticket, we paid an additional amount to The Pax Natura Foundation for sequestration of carbon dioxide equivalent to the amount of greenhouse gases emitted by the flight.

45.

Walking is another healthy, clean form of transportation, but one that does not come naturally to many auto-dependent Americans. It also helps create a more interesting, vibrant community. To encourage walking, we must make it as safe as possible. To make walking safer, we took several measures, including countdown timers for pedestrians, pedestrian-actuated overhead lights at mid-block crosswalks, and orange flags at pedestrian crosswalks for people to carry with them as they cross the streets. People made fun of the flags in the beginning -- as often happens when we try something different -- but now the flags are very popular and have been adopted by other local communities. Two years ago, we were acknowledged as the most improved city in the

United States for pedestrian safety. Although there was a good deal of derision aimed at me when I first put in the flags, they became popular enough that my campaign for reelection touted the success of the program. In the following scene based on the cover photograph of The Beatles' Abbey Road album, I play the role of a pedestrian flag-carrying Paul McCartney, bare feet and all.

46.

Much can be done by government at all levels to empower others to contribute toward solutions. As with my tenure as Mayor of Salt Lake City, High Road for Human Rights seeks in every way possible to empower other governmental entities, local businesses, and individuals to take effective actions to combat global warming and resulting catastrophic climate change.

47.

In order to empower local businesses, we created our e2 Business program. e2 stands for environmentally and economically sustainable. City staff takes what we have learned about conservation and utilization of cleaner sources of energy to local businesses, inventorying what those businesses are doing and what options they have for waste reduction, recycling, more efficient transportation, conservation of energy and water, and improving air quality.

48.

Almost 50 local businesses became e2 Businesses, enthusiastically practicing more sustainable business practices and helping raise consciousness about the importance to working more efficiently and cleanly.

49.

Our next step was a program for citizens. Salt Lake City e2 Citizens registered online. There they established their "carbon footprint," and learned about the tremendous positive contributions they can make in the areas of transportation, energy, recycling, water, food, and health. We asked e2 citizens to set at least five goals in these areas to help minimize their negative impact on the environment. Almost 600 people joined the program in a very short time. We also created a card that e2 Citizens could present at participating e2 Businesses for discounts on goods and services.

50.

Given the scale of the dangers posed by our fossil fuel-dependent energy policy, we sought in every way to enhance our successes by sharing information on our programs and other cities' best practices with other governmental officials, businesses, and citizens, and by collaborating with national and international organizations. Robert Redford, a famous American actor, and I hosted three annual conferences called the Sundance Summit: A Mayors' Gathering on Climate Protection. Since the summit's inception, mayors from throughout the United States came together to meet with numerous experts, including former vice president Al Gore, to learn the

science of climate change, and to strategize about actions we can all take to combat global warming. We were also one of the founding signatories and principal advocates of the U.S. Conference of Mayors Climate Protection Agreement, which over 1,000 U.S. mayors have signed pledging to meet or surpass the Kyoto guidelines. Coming together and sharing success stories is a crucial means of leveraging our successes into even greater positive impacts.

51.

Recognizing the critical need to enlist national and international organizations in our climate protection efforts, I have taken our case to the global community, presenting to municipal and business leaders from throughout the world at the United Nations conference on climate change in New Delhi, where I was sponsored by the US EPA; at the United Nations conference in Buenos Aires, where I was sponsored by ICLEI; at the United Nations conference in Bali, Indonesia; as a consultant to the assistants for heads of state in London, in preparation for the G8 summit, where Prime Minister Tony Blair designated climate change as one of two main agenda items; at the Business and Sustainability Summit in Australia; at two conferences of the Columbia Institute in Canada; at a global energy policy conference in Sweden; and at two meetings of the Clinton Global Initiative, including a gathering of mayors of the largest 40 cities in the world. In implementing the Salt Lake City Green Program, we demonstrated the tremendous impact city governments can have in positively changing destructive patterns of energy use, improving the sustainability of local communities, and enhancing residents' quality of life. Imagine the tremendous beneficial impacts results if mayors worldwide took aggressive actions to improve air quality, combat climate change, and enhance national security and global stability.

52.

Major companies have already proven they can achieve huge reductions of CO₂--and save money doing it. DuPont has reduced global warming gas emissions by 67% and saved \$2 billion. BP, which now markets itself as "Beyond Petroleum," invested \$20 million to reduce global warming gases by 20%--and saved \$650 million!

53.

Cities across the U.S. have taken decisive steps to conserve energy, curb greenhouse gas emissions, and use alternative energy sources in place of fossil fuels. San Francisco is implementing a renewable energy program that, when complete, will eliminate an estimated 550,000 tons of CO₂ emissions and replace fossil fuel-generated electricity by utilizing solar, wind, biomass, ocean wave, and bay tidal energy. The city also has a mass transit fleet with 57 percent zero-emission vehicles, with a goal of a completely zero-emission fleet by 2020.

In November 2006, voters in Boulder, Colorado approved the first carbon tax in the United States. The tax is levied on residents and businesses in the city based on their electricity usage and is used to fund the City's Climate Action Plan.

Former Anchorage, Alaska Mayor Mark Begich, now a U.S. Senator, was a skeptic about the

reality of climate change and the need to move away from our unhealthy dependence on fossil fuels. He changed his mind, however, after attending the Sundance Summit I co-hosted with Robert Redford. Among other important programs, Anchorage is phasing out the city's 16,500 orange street lights, which last 3-5 years on average, and replacing them with energy efficient LED lights that last for 20 years and use up to 50% less energy. The total savings in energy and maintenance are projected to be more than \$1 million annually. Begich also hosted a conference in Anchorage, at which I presented, where 34 U.S. mayors learned about the serious consequences of our continued dependence on fossil fuels, and effective means to conserve energy and implement alternative fuel sources. The mayors were able to observe the effects of climate change firsthand in Alaska, including retreating glaciers, vastly increased destruction of forests by insect populations that have grown dramatically due to shorter winters, and loss of land by coastal villages due to melting ice. Some villages, such as Shishmaref, Alaska, will have to be relocated if climate change progresses.

54.

Other nations have also proven that existing technologies can combat disastrous climate disruption. Germany's Renewable Energy Source Act and Biomass Ordinance, as well as its effort to install photovoltaic panels on many municipal buildings, have helped reduce its emissions of global warming pollutants by 19% since 1990. Denmark generates twenty percent of its electricity by wind. Nearly half of the world's wind turbines are produced by Danish companies. Manufacturing associated with wind power employs approximately 20,000 people and contributes nearly 3 billion Euro to the Danish economy. The City of Toronto has implemented a wide variety of energy-saving initiatives that save the city \$7.7 million annually from reduced energy consumption, with a 20% reduction in global warming gas emissions. There is no question that the United States is lagging far behind in obtaining greater efficiencies, such as more aggressive fuel efficiency standards for automobile manufacturers, and in developing and incentivizing alternative, clean, and renewable sources of energy. As Mayor, I advocated aggressively in numerous national and international presentations, including testimony before the Environmental Protection Agency, for higher fuel efficiency standards and incentives for the use of existing, highly successful alternative fuel vehicles. China has far outpaced the United States in implementing fuel-economy standards for passenger vehicles. In fact, no conventional gasoline-powered car presently manufactured in North America would meet the current Chinese fuel economy standard.

55.

Clean energy technology is widely available even in the United States, which is generally lagging far behind other nations in obtaining greater efficiencies. Ground source heat pumps are one of the most efficient means for heating and cooling buildings. A ground source heat pump utilizes a network of durable plastic coils buried deep in the ground, which absorb the solar energy that heats the earth. A heat pump, connected to the coils, extracts that energy and converts it into heat that is transferred into the building. In the summer months, when the temperature underground is cooler than the temperature of the air, the function of a ground source heat pump can be reversed and used as a cooling mechanism, drawing heat out of a building. This can be done with great success almost anywhere.

56.

A ground source heat system that utilizes municipal sewer pipes recently has been installed at the historic George Downey Mansion in Salt Lake City. Glycol wrapped around a sewer pipe collects heat from the pipe and from the ground where it is buried, and then moves the heat into the building. Once inside, the heat is transferred to forced air, heating the mansion. In the summer, excess heat is moved from the building, cooling the house. When heat coming from the building is greater than the sewer's capacity to absorb it, the excess heat will be transferred into a small pond in the building's basement. This water can then be used to flush toilets and water the exterior landscape. Although this is the only project of its kind in the United States, Oslo, Norway employs a citywide heating system that collects heat from the city's sewage system and transfers it to pipes that serve the main steam heat distribution network. The system provides enough heat energy to warm 9,000 apartments. This has very exciting potential for cities worldwide.

57.

Tidal energy and undersea currents are other exciting, highly promising renewable energy sources. In fact, tidal energy has been utilized for nearly one thousand years for grinding corn using tide mills. Numerous tidal energy stations exist today, such as the Rance tidal power plant in Bretagne, France, and the Annapolis Royal Generating Station in Annapolis Royal, Nova Scotia. Since approximately sixty percent of the world's population resides near coastal areas, tidal energy has the capability to supply a significant amount of the world's energy needs. Tidal energy is also highly dependable, since tidal phases occur with such regularity, and is an energy-dense resource. Undersea currents are another potential source of tremendous energy. The Caribbean island of Bermuda is in the process of constructing a system of undersea windmills to generate up to 10% of its power.

58.

Great advances are being made in solar and wind energy generation. Cities and countries throughout the world are increasingly taking advantage of the tremendous wind energy resources available offshore. Cape Wind, a wind energy generation project being developed offshore near the town of Barnstable, Massachusetts, will meet the energy needs of Barnstable and much of the surrounding area. Masdar, Abu Dhabi, soon to be the world's first zero-carbon, zero-waste, car-free city, is utilizing thin film solar technology, which is less bulky, more flexible, and cheaper to manufacture than traditional silicon-based panels.

59.

Electric and hybrid cars are also becoming more advanced and less costly to manufacture. Companies in the United States have only recently begun to invest significantly in developing electric cars, after General Motors stopped manufacturing and actually destroyed existing models of a successful electric car it had manufactured in the 1990's. However, the Chinese company BYD last year unveiled the world's first mass-produced battery-powered hybrid car that can be

recharged on normal household current.

60.

In addition to making tremendous strides toward achieving the widespread use of clean fuel vehicles, China has made other significant advances in promoting energy efficiency and alternative sources of fuel. The Huangbaiyu village project in China is designed to provide a model of low-energy housing that can be applied in other cities throughout China (and throughout the world), and that might encourage rural populations to remain in the countryside. China's latest five-year plan calls for a 20% increase in energy efficiency by 2010. Shanghai has recently shut down 500 megawatts of coal-fired power generators with plans to decommission more, and has enacted an ordinance prohibiting the construction of any new coal-fired power plants within city limits. Shanghai will also soon implement the first cap and trade carbon dioxide and sulfur dioxide exchange in China.

60.

We all now know the problems that have arisen from shortsighted energy policies and practices, as well as effective means of addressing those problems. Aggressive measures to promote energy-efficient, transit-oriented patterns of economic development and city expansion; alternative fuel vehicles, and the decommissioning of coal-burning power plants will reduce pollution and improve poor air quality. The dangerous potential impacts of climate change, which include public health threats such as droughts, floods, disease, severe weather, and water shortages, can be met through myriad energy efficiency measures and the use of alternative, clean burning sources of fuel. Developing alternative fuel sources will also allow countries to become energy independent, enhancing economic growth. Energy independence through alternative fuel will also improve national security and global stability by preventing potentially disastrous conflict over resources, reducing our dependence on unstable, human rights-abusing regimes, and reducing our exposure to wildly fluctuating fuel prices. Taken together, these measures will promote public health and quality of life for people throughout the world.

61.

Our successes in Salt Lake City to reform our failed, dangerous energy policies, as well as numerous similar successes throughout China, demonstrate that we have the means to make a real, positive difference. By all nations, all businesses, and all individuals realizing the tremendous opportunities in, and assuming their responsibilities for, improving energy efficiency and utilizing alternative sources of fuel, we can meet the challenges of poor air quality, global warming, adverse impacts on public health, energy dependence, destabilizing fuel price fluctuations, and national security vulnerabilities. Working together, we can make a better, more secure, safer future for all.