REPORT TO
MAYOR JON COSTAS

CITY OF VALPARAISO, INDIANA
ENERGY TASK FORCE

SUMMARY
OF
FINDINGS AND RECOMMENDATIONS

APRIL 2007

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City of Valparaiso, Indiana Energy Task Force

April 2007

Dear Mayor Costas:

On behalf of all the members of the Energy Task Force, we would like to thank you for the opportunity to participate in developing recommendations to improve energy efficiency in the City of Valparaiso. We were asked to consider ways in which the current strategic plan could be amended to address municipal energy use as well as identify how the city could focus to help citizens reduce energy consumption.

The Energy Task Force looked at a broad range of issues over a period of six months. Our report is predicated on the belief that energy resource conservation, energy efficiency and renewable energy sources are our most important tools in planning for our energy future. We sincerely hope that our work will be of assistance in developing a comprehensive energy policy to be included in the City of Valparaiso's strategic plan.

Sincerely,

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Co-Chair
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SUMMARY

The Energy Task Force summarizes its recommendations for the City's strategic plan as follows:

1. The strategic plan should include a section on energy.

2. Within that section, we recommend that the City include:

    A. The development of a comprehensive City energy policy.

    B. The formation of an Energy Commission.

    C. A strategy to reduce dependency on traditional gasoline and diesel fuel powered vehicles within the City's operations and in the community.

    D. The implementation of energy efficient building guidelines for existing buildings and new or renovated buildings.

    E. The requirement that energy awareness be a priority for all city employees.

    F. The facilitation of the adoption of renewable energy sources.

    G. Support for community and business projects and development of partnerships that promote energy fitness in our community.

PART I: BACKGROUND

Awareness of rising energy prices and growing concern about the reliability of oil supply from foreign sources have attracted the attention of the citizens of Valparaiso. Since 2000, oil prices have increased from around $25 to over $60 per barrel, with spikes as high as $80 per barrel in the summer of 2006. Natural gas prices have nearly tripled and coal prices have doubled over the past five years. The natural gas market is expected to have continued volatility and oil prices are predicted to steadily increase as world production meets increasing world demand.[1] Key alternative technologies to displace oil currently supply the equivalent of only about one percent of U.S. consumption of petroleum products.[2]

Valparaiso and the State of Indiana are heavily dependent on fossil fuel resources. We import most of the energy we use from other states and countries: 100% of our natural gas, 99% of the oil and petroleum products, and 51% of our coal – which is used to provide electricity. The money Valparaiso spends on energy leaves the City's economy – and our costs are growing. In 2002, the average household spent about $3000 on energy. Today, that amount is up to $4600 per year. Nationally, our oil imports account for more than a third of our trade deficit.

In addition to this financial drain, we are coming to recognize that our reliance on foreign oil has created conditions that are undermining our security and prosperity. Whether or not one classifies our dependence as an "addiction," we acknowledge that with less than 5 percent of the world's population, the United States consumes 25 percent of its oil. As Indiana Senator Lugar has noted, most of the world's oil is concentrated in places that are either hostile to American interests or vulnerable to political upheaval. He has posed the question: How can we shape our energy future before it shapes us in disastrous ways?[3]

The issue of climate change also weighs heavily on our use of fossil fuels. As the scientific understanding of climate change has advanced, there is now wide agreement that man-made emissions of greenhouse gases, including carbon dioxide from fossil fuels, are exacerbating climate change. [4] Indeed, in a recent United States Supreme Court

[1] Martin Kushler, PhD, Director Utilities Program for American Council for an Energy Efficient Economy, presentation to Indiana URC Workshop – "Reducing the Costs of Energy in Indiana," April 13, 2006; U.S. Army Corps of Engineers, "Energy Trends and Implications for U.S. Army Installations." September 2005.

[2] U. S. Government Accountability Office, "Crude Oil: Uncertainty About Future Oil Supply Makes it Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production," (GAO-07-283, Report to Congress), February 2007. "The prospect of a peak in oil production presents problems of global proportion whose consequences will depend critically on our preparedness."

[3] See, Senator Lugar's speech to the Brookings Institution on March 13, 2006: "U.S. Energy Security – A New Realism."

[4] Ibid.

decision, the court recognized that "the harms associated with climate change are serious and well recognized." [5]

In 2006, the State of Indiana released its strategic energy plan, entitled, "Hoosier Homegrown Energy." The plan calls for Indiana to make a long-term commitment to meet much of its own energy needs through the greater use of in-state resources and through energy resource conservation and efficiency.[6] Among the items listed under the heading "What We Need To Do Now" is the commitment by the State of Indiana to purchase 10% of its electric load for all state government buildings from renewable Indiana generators by 2010. However, the need for clean electricity is paramount for everyone. Coal-fired power plants produce greenhouse gases and they are the largest source of mercury emissions in the United States. Indiana's power plants are the fourth highest in mercury emissions in the United States.[7] We are not without clean resources. Indiana possesses viable wind resources across the northern half of the state.[8] There is a vital need to jumpstart a transition process to ensure that clean, renewable energy sources are available here in Valparaiso and for all Indiana residents.

[5] In Massachusetts, et.al., vs. Environmental Protection Agency, Case No. 05-1120, 549 U.S. __ (2007), the court held that greenhouse gas emissions are pollutants subject to regulation under the Clean Air Act.
[6] A complete copy of the plan is available at the Indiana Office of Energy and Defense website at http://www.in.gov/energy/strategicplan/.
[7] U.S. EPA, "Control of Mercury Emissions from Coal-Fired Electric Utility Boilers, 2002, 600/R-01-109. The adverse health impacts of mercury emissions upon our health and to the environment have been well-established. See, e.g., National Research Council, National Academy of Sciences, "Toxicological Effects of Methylmercury," The National Academies Press 2000; Hylander, L.D. and M.E. Goodsite, "Environmental Costs of Mercury Pollution," Science of the Total Environment, 2006; 368: 352-370. .
[8] Hoosier Homegrown Energy Plan, supra, p. 4-5.

PART II: THE TASK FORCE PROCESS

Bearing all these factors in mind, and recognizing the need for a local energy resource conservation effort, Mayor Jon Costas appointed a 12-member Energy Task Force in October 2006 to develop recommendations for the City of Valparaiso's 2008 Strategic Plan. Over the past six months, the Task Force held a series of meetings, and invited members of the community as well as individuals with particular expertise to assist in developing policy recommendations in the following areas:

- Transportation and fleets
- Buildings and City structures
- Developing energy fitness in Valparaiso
- Renewable energy resources

The Task Force arranged for presentations that explained City processes and energy-conserving actions implemented to date. These presenters included the Director of Public Works, the Manager of Project and Facilities Management, and the City VWRD Utility Manager. The meetings also included education on alternative fuels and fleet management by the Coordinator for South Shore Clean Cities in Northern Indiana; information about the Indiana Clean Community Challenge; research of best practices nationally; a presentation on LEED (Leadership in Energy and Environmental Design), the nationally accepted benchmark for the design, construction and operation of energy efficient buildings;[9] a web cam broadcast by the EPA about the Energy Star "Change A Light Pledge;" and information about renewable energy standards presented by a policy advocate from the Environmental Law and Policy Center in Chicago. The Task Force reviewed energy plans developed by cities throughout the country and examined some of the actions that other cities have taken as a result of their energy initiatives. We are especially indebted to Wendy Barrott, the Director of Energy and Environmental Services in Fort Wayne, Indiana, who presented the findings of the Fort Wayne Green Ribbon Commission developed in September 2006.

The Valparaiso Energy Task Force recommendations illustrate the central role that energy plays in our daily lives. Our dependence upon inexpensive, non-renewable fossil fuels is undergoing change, yet the need for reliable, safe and affordable energy underpins our community. Individually and collectively, we can do better. As a nation, we live and work in buildings that are not as energy efficient as they could be.[10] Our reliance on oil as an integral part of our system of transportation has created national

[9] LEED provides a rating system for buildings developed by the U. S. Green Building Council (USGBC) to measure the energy efficiency and environmental impact of a building. The levels of certification of a LEED building are Certified, Silver, Gold and Platinum. These levels are based on a system in which points are awarded for sustainable strategies and technologies incorporated into the design of the project.

[10] According to the U. S. Green Building Council, buildings in the U. S. represent 65% of total U.S. electricity consumption; 36% of total U.S. primary energy use and 30% of greenhouse gas emissions. See, http://www.usgbc.org.

security concerns and price vulnerabilities. In Indiana, our electricity is derived almost entirely from coal-fired facilities that produce greenhouse gases and affect the public health.[11] As many other cities and states have recognized, it is time to reduce our use of fossil fuels and implement policies directed toward smart energy use. The Task Force believes that we can create a strong culture of energy fitness in Valparaiso. Our guiding principles in developing recommendations for our energy future have been identified as follows:

1. Promote City values and priorities;
2. Reduce dependence on foreign oil, contribute to our energy security, and reduce exposure to price volatility;
3. Save taxpayer dollars through energy cost savings;
4. Use precious energy resources wisely;
5. Demonstrate leadership in smart energy management;
6. Reduce CO2 emissions to help the environment and prepare for carbon regulation;
7. Provide a more comprehensive strategic plan;
8. Be a role model for the community in promoting energy efficiency and conservation;
9. Prepare the City for a shift from fossil fuels in an orderly manner;
10. Promote clean energy industries and businesses.

[11] J. Kharbanda, "Why an Indiana Renewable Electricity Standard Matters," Indiana Coalition for Renewable Energy and Economic Development,"(March 2007)("As a result of fine particle pollution, there are millions of dollars in costs associated with premature mortality, illness, and lost productivity in Indiana each year."); "Power Plant Emissions: Particulate Matter-Related Health Damages and the Benefits of Alternative Emission Reduction Scenario," (CATF, June 2004).

III. ENERGY RESOURCE CONSERVATION AND EFFICIENCY EFFORTS TO DATE FOR THE CITY OF VALPARAISO

City departments of Valparaiso have already undertaken certain energy management practices to conserve energy and reduce potential adverse effects upon the environment. The Energy Task Force recommends that the City build upon this foundation to provide a comprehensive strategic plan for energy use in Valparaiso. Efforts to date have included:

- Installation of LED traffic lights (low wattage lights) at new construction sites.
- Development of the roundabout at the Lincolnway/ Sturdy/ LaPorte Avenue intersection to reduce vehicle emissions and traffic congestion;
- Purchase of vehicles with improved fuel efficiency for the police fleet;
- Purchase of five-star energy efficient HVAC units for City buildings as part of the capital improvement plan.
- Investment in energy efficient variable speed pumps for water and wastewater pumping systems;
- Use of methane produced at the city wastewater facility for heating the buildings and offsetting natural gas utility costs;
- Replacement of incandescent lights with compact fluorescent lighting is underway;
- Education programs for Utilities Department staff regarding conservation and efficiency;
- Expansion of pathways to encourage pedestrian and bike use;
- Planning for development of public transportation options – trolley service within the city and commuter rail service to Chicago;
- Trip/route consolidation of city vehicles to reduce fuel usage.

IV. RECOMMENDATIONS

The recommendations contained in this report include several areas of focus: alternate fuels and modes of transportation; energy efficient buildings; community awareness and participation; implementation of renewable energy sources. As the Task Force developed its recommendations, several overarching themes emerged. These themes apply across the identified recommendations and should be kept in mind as points of reference when decisions for modifying Valparaiso's strategic plan are made.

City leadership: The recommendations contained in this report require broad participation from all sectors of our community. Neither the City of Valparaiso nor any other governmental entity can accomplish these changes alone. The City can, however, play a catalytic role by setting a positive example, exercising a leadership role, and convening partners to develop solutions.

Action is required: We believe the City needs to act to incorporate basic tenets of energy conservation, energy efficiency and use of alternative energy sources. A "wait and see" approach to this issue will diminish opportunities Valparaiso now has to reduce its dependence on fossil fuels and prepare for caps, limitations or other restrictions upon carbon emissions in the future. Similarly, we believe energy strategies must be pursued now, even ahead of the "market." As Senator Lugar has noted: *"By the time a sustained energy crisis fully motivates the market, we are likely to be well past the point where we can save ourselves. Our motivation will come too late and the resulting investment will come too slowly to prevent severe economic and security consequences of our oil dependence. This is the very essence of a problem requiring government action."* [12]

Baseline information: Baseline information of current electricity, natural gas and fuel consumption in Valparaiso must be compiled and updated. We recognize that the City's growth, not unlike many other cities, will place demands on its energy resources. Our recommendations strive to achieve reasonable energy goals over time which take future annexations and growth into account.

Institutionalizing energy fitness: The Task Force has had the opportunity to delve into many of the issues surrounding energy use. Our investigation clearly points to the conclusion that the city should include these recommendations within its strategic plan and institutionalize the goals provided herein through the development and adoption of a City Energy Policy. The Task Force is also urging the City to establish an Energy Commission which will have ongoing responsibility to implement the City Energy Policy, assess the status of energy resource conservation throughout the City, set progressive benchmarks for improving energy efficiency, explore additional sources of renewable energy such as solar water heaters or photovoltaic panels, and pursue funding and grant opportunities for projects consistent with the City Energy Policy.

[12] Senator Lugar, Speech to Brookings Institute, March 13, 2006.

1. FLEETS AND FUELS

The City of Valparaiso should pursue a comprehensive strategy to reduce dependency on traditional gasoline and diesel fuel powered vehicles within the City's operations and in the community.

A. Reduce the use of traditional gasoline and diesel powered vehicles by city-wide implementation of an anti-idling policy, reduction in trips, and improved efficiency of existing vehicles in the municipal fleet.

B. Accelerate the conversion to alternative vehicles, including but not limited to hybrid powered vehicles where appropriate and available, or other vehicles which have the highest fuel efficiency for each vehicle class.

C. Explore the use of biofuels which have proven energy efficiencies, such as cellulosic ethanol. [13]

D. Participate in the South Shore Clean Cities initiative, sponsored by the U.S. Department of Energy, which provides tools and resources for communities to reduce consumption of petroleum-based fuels.

E. Provide incentives to reduce city employee driving – trolley passes, carpooling.

F. Support and expand programs and policies that promote efficient transportation options including walking, bicycling, and transit use.[14]

GOAL:

Reduce the amount of gasoline and diesel fuel used in 2007 by the city fleet 5% by 2010.

[13] See, Congressional Research Report for Congress, "Ethanol and Biofuels: Agriculture, Infrastructure, and Market Constraints Related to Expanded Production," RL33928 (March 16, 2007); M. Wald, "Is Ethanol for the Long Haul?" *Scientific American,* (January 2007); A. Farrell, R. Plevin, et. al., "Ethanol Can Contribute to Energy and Environmental Goals," *Science,* (January 27, 2006); M. Wang, "Energy and Greenhouse Gas Emissions on Fuel Ethanol," Argonne National Laboratory, NGCA Renewable Fuels Form (August 23, 2005).

[14] The City's current strategic plan calls for the development of key sidewalk routes throughout the city, as well as transportation initiatives including a city trolley service and a new commuter rail line to Chicago. The Task Force endorses these initiatives and fully supports all efforts to increase the availability of public transportation and walking/biking routes which will have the effect of decreasing our dependency on vehicular use.

2. BUILDINGS AND STRUCTURES

The City of Valparaiso should implement energy efficient building guidelines for existing buildings and new or renovated buildings.

A. Implement a coordinated energy efficiency purchasing program throughout city government that requires all equipment and appliances to be Energy Star labeled so as to reduce energy use.

B. City bid specifications for building projects should require energy and resource efficiency standards.

C. Review all exterior and interior lighting to reduce the energy consumed and ensure appropriate lighting intensity.

D. Review city department recycling practices for energy efficiency and maximum material conservation benefits. Examine and implement purchasing policies consistent with energy efficient practices.

E. Conduct energy audits to guide priorities in infrastructure improvements where necessary, to determine energy savings potential, and establish a retrofit schedule as part of the capital improvement plan.

F. Explore ways to expand co-generation and heat recovery to save energy.

G. Support at least one city building project built to the national LEED silver standard.

H. Ensure that all city building systems have a defined preventative maintenance schedule which promotes energy efficiency; provide associated training for all maintenance staff.

I. Incorporate natural ventilation in new city buildings by economizer cycles on HVAC or operable windows to minimize energy use during optimum outdoor temperatures and conditions.

GOAL

Reduce the 2007 aggregate energy use of city buildings and structures 10% by 2010.

3. CREATE AN ENERGY EFFICIENT EMPLOYEE CULTURE

The City of Valparaiso should require energy awareness to be a priority for all city employees.

A. Develop and implement a comprehensive energy conservation policy for all city employees.

B. Reward helpful energy savings suggestions by employees.

C. Adopt ongoing conservation measures, including:

- Minimize all non-essential lighting and other electrical loads during non-business hours.
- Regulate temperature using programmable thermostats to insure that interior office air is not heated above 68 degrees F. and cooled below 78 degrees F. unless such a temperature would expose employees to a particular health or safety risk. Use natural ventilation where possible.
- Hot water temperatures should not be set above 105 degrees F.
- Require all lights to be turned off in unoccupied rooms to the maximum extent possible.
- Overhead lighting, security and safety lighting should be held to the lowest acceptable levels.
- Video monitors and computers should be set for automatic power-down (sleep) mode after 5 minutes of non-operation.
- Copiers and printers that have an automatic power-down or "energy saver" feature shall have this feature enabled.

GOAL

Develop and implement an energy resource conservation policy for city employees by January 1, 2008.

4. SUPPORT RENEWABLE ENERGY POLICIES AND REGULATORY STRUCTURE

The City of Valparaiso should facilitate the adoption of renewable energy sources by lobbying for a renewable energy standard at the State and Federal levels.

A. Exercise influence with state legislators to establish a minimum renewable energy standard of 10% by 2010.[15]

B. Exercise influence to provide tax and other financial incentives for renewable energy projects in the city.

C. Adopt a city resolution calling for a renewable energy standard.

D. Exercise influence with the local utility provider to gain access to the renewable energy market.

GOAL:

Set a minimum of 10% of electricity use from renewable sources by 2010.

[15] Efforts to reduce reliance on oil and natural gas should not lead to increased use of coal (for production of liquid fuels or electricity) because of the greatly increased greenhouse gas emissions that would result.

5. DEVELOP A CULTURE OF ENERGY FITNESS IN VALPARAISO

The City of Valparaiso should support community and business projects and develop partnerships that promote energy fitness in our community.

A. Participate in the "Change a Light, Change the World" challenge sponsored by the EPA.[16] (See Attached)

B. Conduct citizen outreach on ways to reduce home energy use, using the city's website, media and partnerships with entities such as local educational institutions, retailers, libraries, non-profit organizations and the public schools. Education in our school system must be a critical link in developing community awareness about energy issues.

C. Investigate financing programs for home energy efficiency projects and for installation of renewable energy systems in residential and commercial buildings.

D. Identify and encourage businesses that design or manufacture energy efficient or renewable energy equipment, businesses that install or build structures that use such technology, and energy consultants that provide advice and design solutions which would improve energy use within Valparaiso.

E. Promote Valparaiso as the energy efficient place to live and do business.

F. Identify opportunities for Valparaiso to participate in regional efforts to develop energy efficiency and conservation programs.

GOAL:

Reduce 2007 community energy use 10% by 2010.

[16] Valparaiso residents can get involved by taking a pledge to save energy by replacing at least one incandescent light with an Energy Star compact fluorescent light. The Task Force recommends that the City partner with major retailers in the area for CFL recycling and provide information to residents to ensure that CFL bulbs are recycled due to the small amount of mercury contained therein.