

TOWN OF WESTERLY, RI
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Town of Westerly Peak Oil Task Force

Report to the Westerly Town Council

August 14, 2008

The Town of Westerly Peak Oil Task Force was created by the Westerly Town Council to evaluate and report to the Council the risks and vulnerabilities of the Town and its residences to “Peak Oil”. The Task Force was also charged with identifying and reporting the opportunities for actions by the Town government and Westerly residents to take that would tend to diminish those risks and vulnerabilities.

Membership

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Definitions

“Peak Oil”, for the purpose of this report, is defined as being the point in time when aggregate global oil production reaches its maximum, and thereafter goes into decline.

The Geology and the Economics of Oil

Oil, also known as petroleum, is a finite resource of the planet Earth. All oil fields put into production increase their yield until they reach their maximum potential, and then production declines until the cost of recovery is no longer economical.

The first oil deposits put into production tend to be those that are the largest and/or contain the highest quality petroleum. The highest quality petroleum tends to be the lightest and most fluid and, consequently, the upper levels of any particular oil deposit tend to be of the highest quality within the deposit.

The effect of these facts is that, over time, as oil deposits are depleted, the remaining oil tends to be of lower quality. In addition, finding new oil deposits tend to become more difficult to find and, when found, their oil tends to become more expensive to produce. Ultimately, new discoveries that can be profitably recovered are only able to offset the declining production of older oil fields.

The last two decades have seen a rise in demand for oil from two factors, 1) the expansion of economies in the developed world and 2) the emergence of India and China as modern energy consuming industrialized economies. For example, these factors have increased global oil demand by 1.1% in 2007 and is forecast to grow by 2.5% in 2008 (figures from the International Oil Agency).

When global oil production can no longer be increased to accommodate global demand, elementary economics tells us that the price must rise until demand falls to the point where it equals supply. Compounding this problem is that soon after production from oil fields can no longer be increased, their production begins to decline. Today, we see the oil production of many oil-producing countries is in decline, including Mexico (the third largest supplier to the US) and countries adjacent to the North Sea. Questions exist concerning the truth of reserves claimed by many Mid-East oil producing countries. Such claims set OPEC production allocations and countries such as Saudi Arabia consider the data used to calculate their reserves as national security secrets. The question is: When global production will begin to decline, resulting in price spikes and potential disruptions in availability, all of which will change the way we live?

When will Peak Oil Happen?

That Peak Oil will happen is certain. What is uncertain is precisely when it will occur. We will only know for certain after it has happened, looking back. Some experts are forecasting it will happen within a few years. Others are stating that it has already happened in recent years. The fact is that global oil production reached a plateau of approximately 85 million barrels per day in 2005, with insignificant variation for the past three years. At this time, there is slim to no evidence of significant opportunities to increase average daily oil production. There is more oil to be found, to be sure. However, as new oil deposits are more difficult to find, and more expensive to produce, it is unlikely to change our global energy outlook. New sources of oil are unlikely to more than offset the increasingly rapid decline of production from older oil fields around the world. It is highly unlikely that such new sources of supply will be sufficient to meet increases in global energy demand.

There may be brief rises and falls of oil production and prices, but the trend is clear and it is irreversible. For planning purposes, it is prudent to consider "Peak Oil" as happening now.

We still have oil to meet our needs, although the trend is that it is becoming increasingly expensive. Proven and effective strategies that build resilience and reduce energy vulnerability exist. There are things that we can do as individuals, and as a community, to prepare for when oil becomes less and less affordable.

Peak Oil Implications for Westerly

The implications of Peak Oil are profound, particularly in this era of rapid increases in demand for oil from developing countries. Following peak oil, the Town of Westerly and its residents must expect a steady trend of higher prices for petroleum products, other fossil fuels, and other products whose production and delivery is dependent upon them. In time, it must also be expected that the availability of those products will diminish.

This is a serious concern because oil and other petroleum products impact most aspects of

is primarily produced by large agribusinesses and factory farms which are heavily dependent on oil and natural gas for planting, fertilizing, harvesting, processing, packaging and transportation of their products.

The Westerly Peak Oil Task Force has gathered information about the implications of peak oil for the Town of Westerly and its residents. Risks and vulnerabilities of our community from peak oil are provided below. Ideas for actions that can be taken by the Town and its residents to diminish such risks are subsequently provided.

Risks and Vulnerabilities of the Town of Westerly from Peak Oil

1. Increasing costs for heating and cooling of municipal buildings, including schools.
2. More expensive and reduced road maintenance, due to petroleum products used in the production of asphalt.
3. As the price of oil increases, the price of electricity, natural gas and other energy resources will also rise.
4. Increasing costs for all products and services.
5. The Town will struggle to meet the higher costs of operating municipal water, wastewater and solid waste management systems, as well as education, law enforcement and other essential services.

6. Risks and Vulnerabilities of the Residents of Westerly from Peak Oil

7. Increasing home heating cost.
8. Reduced future home heating oil and gas availability.
9. Increasing auto and air transportation cost.
10. In the future, there may be gasoline rationing.
11. Increasing food costs.
12. Some foods, including some with high nutrition, may no longer be consistently available.
13. Increasing costs for all products and services.
14. Increasing costs for transportation to work, and to where essential products and services can be purchased.
15. People employed by firms affected by increasing energy costs may become unemployed until they are able to make the transition into different fields. Given the reality of anticipated energy supply disruptions and energy prices trending upwards, there is increased risk of periodic or even persistent economic recession.

16. Acute Risks to Some of the Residents of Westerly from Peak Oil

17. More people with oil home heating systems may not be able to afford to heat their homes each winter.
18. Some people with longer commutes or who live at greater distance from life's necessities may not be able to afford to get to work or shop.

19. The poor and the elderly will find it increasingly difficult to afford quality food or adequate heat, transportation, and medical services.
20. Vulnerable and marginalized populations, including undocumented residents, are also at risk of being unable to obtain adequate food, energy and healthcare.
21. People employed in seasonal industries such as restaurants, fishing and tourism are at risk of losing their livelihood.
22. Homelessness, substance abuse and domestic violence are at risk of increasing as the result of the increased stress of daily life.

23. Recommended Immediate Actions to Address Acute Risks Faced by Some Westerly Residents

24. Conduct door-to-door solicitation of donations to the Community Crisis Fund, developed to provide energy and basic needs assistance for residents in crisis by nonprofit and non-government agencies such as the Jonnycake Center.
25. Create solutions for an anticipated rapid increase in the population who need shelter during the winter months.
 - a. Develop a clearinghouse for residents who must vacate their homes during the winter months to connect with residents who need to take people in to help pay their energy bills.
 - b. Establish additional collective housing contingency plans to shelter families in schools and the Westerly Senior Center.
26. Develop training and a service for people who need to have their pipes drained because they cannot heat their homes.
27. Create a public or voluntary shuttle service for qualified low income people poor to get to medical services, food stores and other necessities; or create a subsidy program for them to use taxi services.

28. Opportunities for the Town of Westerly and its Residents to Take Action to Reduce Risk and to Build the New Post-Petroleum Future

29. The Town of Westerly Peak Oil Task Force has identified actions that can be taken by the Town and its residents to ameliorate the risks described above. There are also opportunities available to the Town and its residents to reduce their costs and to create new industries, businesses and jobs within our community.

30. Town of Westerly Opportunities for Actions

31. Conduct community resilience planning, using a whole-systems approach, which will update decision making processes to enhance their capacity to support the adaptability of the Town of Westerly to rapid change.
32. Establish a written Westerly Municipal Energy Policy covering the conservation and generation of renewable energy generation for the Town to make our community more economically resilient.

33. Establish clear goals for conservation and renewable energy generation for Town municipal buildings and schools. Energy audits, solar hot water and photovoltaic systems, and wind energy systems all present opportunities to stabilize energy costs in a rising price environment, and diminish the requirements for future tax increases.
34. Join the Clean Cities Alliance and Post-carbon Cities, to access current information about actions being taken by other communities to address the risks associated with Peak Oil.
35. Gather essential data regarding current heating oil and gasoline use by the Town of Westerly and its residents, such as:
 - a. Statistics about municipal, business and consumer dependency on oil and other energy resources.
 - b. Statistics about employment and travel requirements of Westerly residents.
36. Invest in upgrading municipal buildings to increase their energy efficiency. Obtain an energy audit and recommendations from National Grid.
37. Consider “green roofs” to reduce heating and cooling costs.
38. Consider obtaining free rooftop solar panels in exchange for purchasing the electricity they produce. (Akeena Solar, Alpha Energy, Ausra, Solas City)
39. Create a Municipal Power Authority to generate renewable energy to be distributed (via National Grid and People’s Power and Light) first to Town facilities such as the sewerage treatment plant, the water systems and schools, and then to the Westerly Hospital, and local manufacturers and farms.
 - a. Potential locations: Wastewater Treatment Plant, Westerly High School, Westerly Middle School, Westerly Airport, Westerly Municipal Land Trust sites.
40. Build public support for highly productive single site wind turbines and wind farms.
41. Seek out potential employers who would be interested in relocating to a town with a reliable and affordable energy supply.
42. Encourage and facilitate the creation of new businesses, or the expansion of existing ones, that will meet the changing needs of the community and create jobs. These could include:
 - a. Local bio-diesel production.
 - b. Repair services for bicycles and household items.
 - c. Transportation services, such as short-term rentals of trucks, vans, SUV’s and utility trailers, as well as public transit services such as taxis, vans, buses, light rail.
 - d. Production of all kinds of goods and services.
43. Update land use and zoning regulations to:
 - a. Encourage the relocation of residences and retail and other businesses closer to downtown.
 - b. Increase the permitted density and mixed use of properties in residential areas
 - c. Increase the permitted residential density within walking distance of

- d. Allow for homeowners to accept extended family members and boarders
 - e. Encourage or mandate geo-thermal heating systems for all new construction
 - f. Mandate protection for agricultural lands
 - g. Remove restrictions on building greenhouses and food production on private property
44. Seek support from the State of Rhode Island Department of Transportation, Amtrak, and the Federal Government to initiate commuter rail service between Westerly, Bradford, Providence, Mystic and New London.
 45. Repaint roads, particularly main arteries, to provide for bike lanes. Install signs asking drivers to "Share the Road"
 46. Request that the Rhode Island Department of Transportation repaint all State roads in the Town of Westerly to provide for bike lanes.
 47. Create or facilitate the creation of a free bicycle rental program like the one in Mystic, Connecticut. Place bicycle locking racks at appropriate places around the Town.
 48. Enforce ordinances requiring sidewalks to be kept clear of obstructions and snow.
 49. Install signs directing drivers to comply with State Law forbidding the idling of their engines at traffic lights.
 50. Encourage and facilitate the creation of satellite healthcare clinics by the Westerly Hospital and Wood River Health Services.
 51. Support the establishment of community gardens and greenhouses on Town lands.
 52. Create a clearinghouse to connect people seeking opportunities to board with homeowners seeking boarders.
 53. Create an on-going public awareness and educational program about the implications of peak oil and what people can do to adapt to rapid change.
 - a. Educate Town Officials, the media and general public about peak oil and its implications.
 - b. Require programs in Westerly school science and civics class curricula that teach children about the geologic and economic implications of Peak Oil and what can be done about them.
 - c. Maintain an e-mail blast list to forward articles and news related to peak oil. Use the public access cable channel to educate and to disseminate information.
 - d. Motivate by referring to the national security and patriotism implications of taking action.
 - e. Clearly communicate that current purchasing decisions must assume substantially higher energy costs and reduced resource availability
 - f. Calculate the Town of Westerly's carbon footprint, which is useful for identifying where money can be saved. Do the same for families of different demographic segments of the Town.
 - g. Use the Town's web site, the public access cable television channel, and evening programs in the schools to encourage residents to take action and to teach skills that will be increasingly needed.
 - i. Encourage more household food production, preservation and

- ii. Encourage and facilitate the creation of community gardens and greenhouses on private lands.
- iii. Encourage the increased local production of all kinds of goods and services for local use; and teach residents how to do it.
- h. Use existing websites (i.e. Town, Bank, Library) to inform the public of actions people can take to reduce their own vulnerabilities and risks associated with peak oil such as:
 - i. Obtain an energy audit from National Grid.
 - ii. Move close to where one works and/or shops.
 - iii. If possible, move to within one mile of down town.
 - iv. Move into a smaller home, or close off parts of the current residence.
 - v. Convert home energy systems to geo-thermal heat pump and solar.
 - vi. Invest in insulation and florescent lighting.
 - vii. Buy a highly fuel efficient vehicle – a plug-in hybrid when they become available.
 - viii. Calculate ones' carbon footprint (provide on-line link) and explore how one can save money by reducing it.
 - ix. Dry clothes on a clothes line
 - x. Make purchases in bulk
 - xi. Purchase only nutritious food, avoid junk, sweets and soft drinks
 - xii. Support wind and solar energy projects
 - xiii. Plant vegetable gardens on existing lawns
 - xiv. Learn to grow and preserve food
 - xv. Learn skills to produce and repair life necessities, which may become essential employment skills in the future.
- 54. Create a subsidiary volunteer organization to get out the message using:
 - a. Frequent Op-Ed pieces and letters to the editor.
 - b. Public education programs, with speakers and multimedia presentations.
 - c. Programs in Westerly schools.
 - d. Information booths at community events.

Conclusion

The Town of Westerly Peak Oil Task Force has concluded that "Peak Oil" is real, and the current level of oil consumption is unsustainable. The implications of global Peak Oil occurring within the next five years demand attention. It will impact all functions of the Town of Westerly and every aspect of the lives of its residents. The world is on the brink of an energy crisis that has drastic implications for everyone. As almost every aspect of modern life is sustained by cheap energy, the impacts of rising oil prices will be profound. The time to take action to prepare for rapid economic and social change in our community is now.

The severity and the rapidity of the impact of changes coming as the consequence of Peak Oil will be directly correlated with the leadership provided by Westerly's Town

government, and the actions taken by its residents to prepare to adapt to increasing costs and decreasing availability of fossil fuels and the products that depend upon them.

Looking forward, we can either plan an orderly energy descent strategy, or we can refuse to accept that the era of cheap energy drawing to a close and continue business as usual. Either way, the policies and choices we make now will have lasting consequences for future generations as well as for ourselves.

With willingness to accept the reality of peak oil and its implications, with good leadership, and with the timely and appropriate response of the people of Westerly, the Task Force concludes that the necessary changes will, in many respects, improve our quality of life and our environment, and the sense of community of our Town.