

The emerging liquid fuel crisis: military concerns vs civilian inaction

ASPO- Washington
October 9, 2010

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IEA: World Energy Outlook (N.08)

- “The world’s energy system is at a crossroads. Current global trends in *energy supply* and consumption are patently unsustainable....
- What is needed is *nothing short of an energy revolution.*”
- WEO, p. 37

Six Saudi Arabias

- “Some 64 mb/d of additional gross capacity, the equivalent almost *six times that of Saudi Arabia today*, needs to be brought on stream between 2007 and 2030.”

- 2008 WEO, p. 41

IEA's DD on 6 new Saudi Arabias:

- “Who thinks we’re going to be able to find and develop seven [sic] Saudi Arabias in the next 22 years?”

- IEA Deputy Director Richard Jones speaking at the Turkish War College, April 28, 2009.

Nathan Freier (SSI, May 08)

- *Strategic shocks “are at once both predictable (and often predicted) but also un- or inadequately prepared for.”*
- Naval Postgraduate School: “In hindsight, it is clear that *most shocks are the products of long-term trends....*”

(Freier, p.6)

Global oil supply: 11 trends

- Oilfield discovery rates peaked in mid-1960s
- Oilfield depletion rates are accelerating
- Net energy/EROEI rates are declining
- Conventional oil stuck at 74 mbpd since 2004
- Unprecedented drilling rates
- Increasing shift to off-shore & deep-water drilling (despite increasing environmental risks)
- “Grey factor” (veterans retiring)
- “Rust factor” (aging infrastructure)
- Price volatility & increasing cost
- Export capacity will decline
- Growing demand (86 mbpd = 1,000 bps)

Some additional trends

- Increasing acceptance that the “easy oil” is nearly gone.
- Increasing warnings of near-term oil supply crunch (2011- 2015, published at EB).
- Still no viable liquid fuel replacement.
- Ongoing lack of awareness/concern by politicians, media, the public... even emergency planners.
- Ongoing inaction on emergency planning (30 years).

Teilstudie 1:

PEAK OIL

Sicherheitspolitische Implikationen knapper Ressourcen



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Juli 2010

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3.2. Systemisches Risiko bei Überschreitung des „Tipping Point“

Der Peak Oil kann dramatische Konsequenzen für die Weltwirtschaft haben. Das Ausmaß dieser Konsequenzen wird sich - nicht nur, aber eben auch – durch einen Rückgang des Wachstums der Weltwirtschaft messen lassen. Die nachstehenden Ausführungen werden zeigen, dass auf der Skala möglicher, Peak-induzierter Wachstumseinbußen ein *Tipping Point* existiert, an dem sich entscheidet, ob die Folgen des Peaks ex ante analysierbar bleiben oder nicht.

Das Phänomen der Tipping Points in komplexen Systemen ist aus der Mathematik seit langem unter dem Begriff „Bifurkation“⁸² bekannt. In letzter Zeit wird vor allem im Bereich der Klimaforschung auf mögliche „Kipp-Prozesse“⁸³ hingewiesen. Tipping Points zeichnen sich dadurch aus, dass bei ihrem Erreichen das System nicht mehr proportional

Non-linear responses

- “Intuitively, it might appear that a phase of slow reduction in the amount of oil leads to an *equally* slow reduction in economic capacity....
- *This is a false assumption: economies move within a narrow band of relative stability.*
- Outside this band, the system reacts chaotically.”

(p. 47)

Bundeswehr warning

- *... the energy supply of the economic cycle must be assured.*
- A shrinking economy over an indeterminate period presents a highly unstable situation which inevitably leads to system collapse.
- *The risks to security posed by such a development cannot even be estimated.*

- Bundeswehr, *Peak Oil*, p. 50

Unprecedented risk

- “The peaking of world oil production presents the U.S. and the world with an *unprecedented* risk management problem.”

- opening sentence of the Hirsch Report, 2005

Hubbert: Unprecedented moment

- We face “a crisis in the evolution of human society. It’s unique to both human and geologic time. *It has never happened before and it can’t possibly happen again.* You can only use oil once.”

Bundeswehr report is unprecedented

- Conducted by a team of analysts
- Comprehensive (99 pgs)
- Focus is on domestic/internal threat:
 - ie. the importance of affordable fuel to the economy, thereby preserving domestic order & prosperity and adequately funding the military.

Bundeswehr on awareness

- ... *the dangers* of the erosion of our resource base *must be incorporated in the social consciousness*. Only in this way can we raise the necessary awareness....”

- Bundeswehr, *Peak Oil*, p. 80

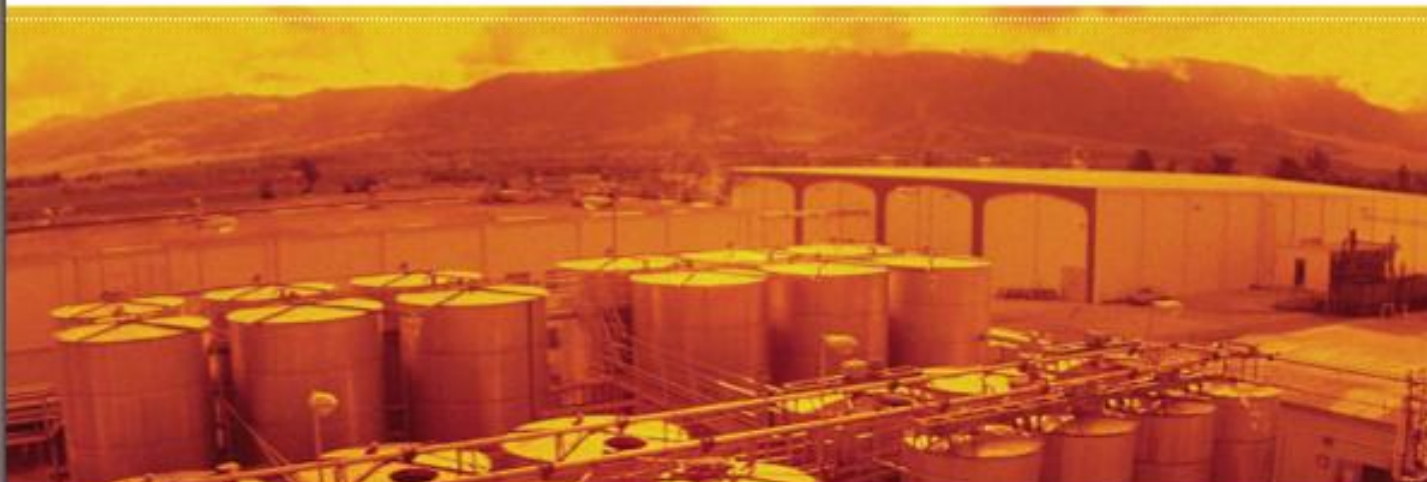
USAWC STRATEGY RESEARCH PROJECT

US OIL DEPENDENCY--THE NEW WEAPON OF MASS DISRUPTION

by

Lieutenant Colonel Joseph E. Czarnik
United States Army Reserve

SIMULATION REPORT AND SUMMARY OF FINDINGS · On June 23, 2005, a group of nine former White House cabinet and senior national security officials convened to participate in a simulated working group of a White House cabinet. Their task: to advise an American president as the nation grapples with an oil crisis over a seven-month period. As they enter the room, they are unaware of the circumstances or nature of the oil crisis.



Oil Shockwave exercise: 2005

- This top-level role-play examined effects of a 4 mbd (5%) loss in global oil production.
- Predicted result: a near-tripling of the world oil price.
- Scenario did *not* involve loss of major Middle Eastern facilities (ie. was far from worst-case).

Shockwave conclusions:

- “It’s got to be portrayed not as an energy issue... but *as a matter of economic security and national security.*” - Richard Haass
- [The attacks in Shockwave] “were relatively *mild compared to what is possible.*”
- James Woolsey
- “The scenarios portrayed were absolutely not alarmist, they’re realistic.... *The threat is real and urgent, requiring immediate and sustained attention at the highest levels of government.*”
- Robert Gates

NRCan on Peak Oil: Oct. 2/07

“At this time *the Department has no views* on this issue.

There is no imminent peak oil challenge....

I trust that this information is useful to you and responds to your concerns.

Sincerely, questions@nrca.gc.ca”



AgCanada on peak oil

- “The energy security issue and its influence on any type of industry (including agriculture and agri-food) are *definitely part of the mandate and expertise of Natural Resources Canada.*
- [Any study on peak oil] would definitely be a *joint project carried out under the lead of the Natural Resources Canada fossil fuel market and energy cost experts.*
- I would advise you to *direct any further concerns to them.*”
- Oct. 3, 2007

AgCanada update: Jan. 21/10

“We haven’t specifically looked at peak oil since our last meeting in 2007, and we don’t have any plans to do so in the near future....

We’ve never looked at the specific implications of peak oil (or had the capacity to do so).

NRCan is the lead agency on this and we have always followed their lead on this file.”

- personal correspondence from Senior Economist, AAFC



USDA: no research on peak oil

United States
Department of
Agriculture



Economic
Research
Service

Economic
Research
Report
Number 94

March 2010

Energy Use in the U.S. Food System

Patrick Canning, Ainsley Charles, Sonya Huang,
Karen R. Polenske, and Arnold Waters

USDA on “end of cheap oil”

- “Although I'm not aware of a USDA study on the effects to the agri-food sector of "the end of cheap oil", the issue of food system sustainability is a priority research area at USDA....”

- personal correspondence from USDA
Senior Economist, Aug. 2010



Department of Homeland Security Office of Inspector General

DHS' Progress in Federal Incident Management Planning

(Redacted)



Key Scenario Sets	National Planning Scenarios	Strategic Guidance Statement		Strategic Plan		Concept of Operations Plan	
		Start	Final	Start	Final	Start	Final
Explosives Attack	Terrorist Use of Explosives	3/7/2008	8/11/2008	7/8/2008	11/5/2008	10/16/2008	5/29/2009
Nuclear Attack	Improvised Nuclear Device	8/1/2008	9/26/2008	8/13/2008	1/8/2009		
Biological Attack	Aerosol Anthrax	10/8/2008	1/8/2009	11/5/2008	7/20/2009		
	Plague						
	Food Contamination						
	Foreign Animal Disease						
Radiological Attack	Radiological Dispersal Devices	10/29/2008	1/8/2009	11/24/2008	7/21/2009		
Chemical Attack	Blister Agent	12/8/2008	6/26/2009 ⁹				
	Toxic Industrial Chemicals						
	Nerve Agent						
	Chlorine Tank Explosion						
Natural Disaster	Major Earthquake						
	Major Hurricane					12/16/2008 ¹⁰	
Cyber Attack	Cyber Attack						
Pandemic Influenza	Pandemic Influenza						

GAO

Testimony

Before the Committee on Homeland
Security, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EDT
Wednesday, September 22, 2010

DISASTER RESPONSE

Criteria for Developing and Validating Effective Response Plans

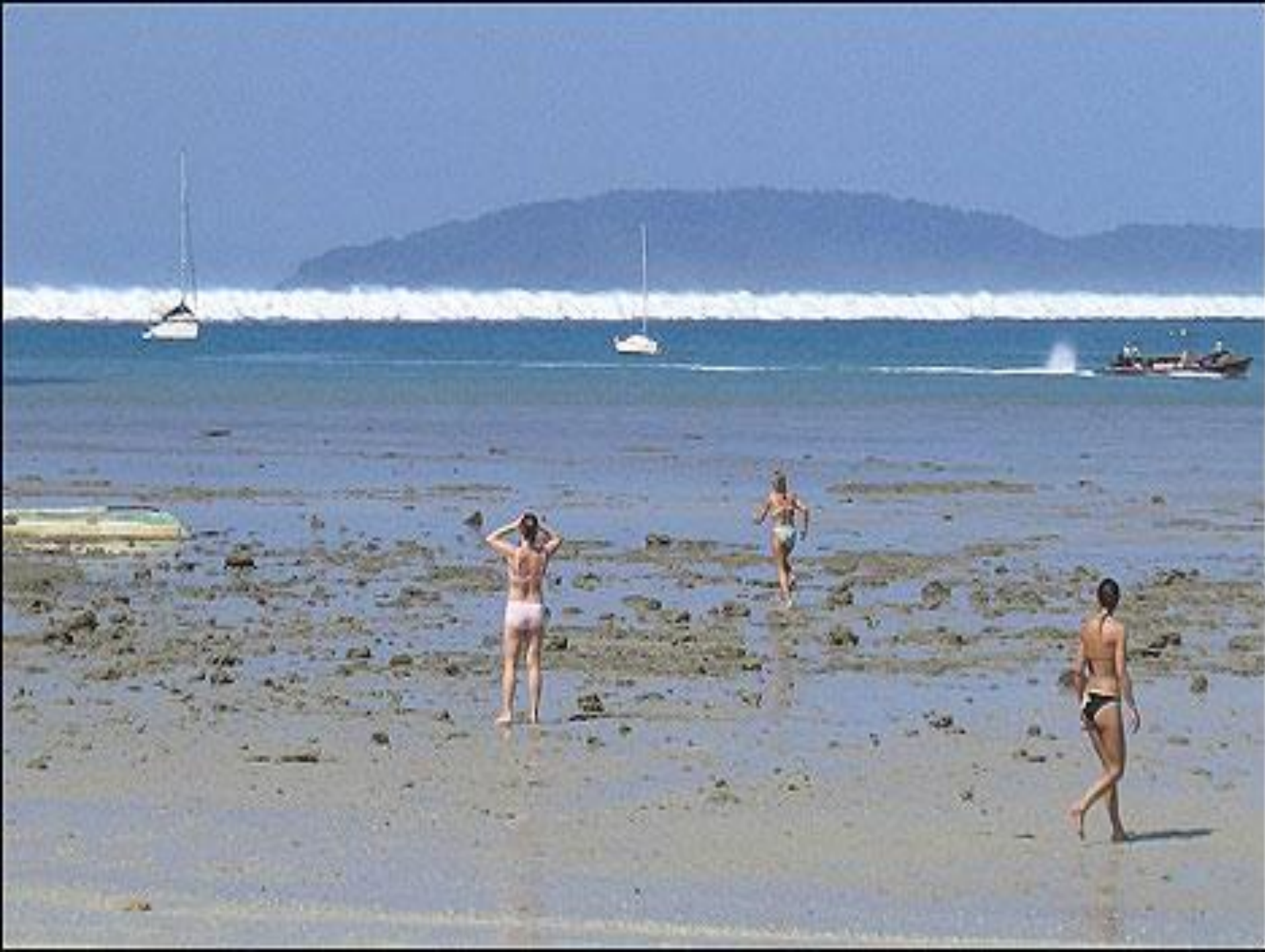
Statement of William O. Jenkins, Jr., Director
Homeland Security and Justice Issues

“Immediate & sustained attention”?

- No review of Liquid Fuel Emergency (LFE) legislation or LFE plans here in North America (as in Australia, UK & NZ).
- Public Safety Canada: “A fuel emergency is not in our mandate.”
- Minimal progress on LFE planning at the provincial (and state?) level
- No local LFE response capability (as in UK)

Fuel crisis becomes food crisis

- Agriculture departments in USA and Canada have done no research on peak oil or even on the more general issue of “end of cheap fossil fuels” (not on radar).
- Although farmers are listed as Essential Users on all emergency allocation plans, net farm income is at record lows.
- The current plan is to use “full price pass-through” as the primary means of cutting consumption.
- However, this will not only “kill demand,” it will kill food production if farmers can’t up-front fuel expenses.



LFE plans are for small-scale disruptions only

- “ ... the IEA implicitly or explicitly assumes that severe and extended disruptions... either will not occur or are of such low probability that *they need not be prepared for.*”

- GAO, 1981

Still the case, 26 years later...

- “The IEA emergency policy focuses on alleviating *short-term* oil supply disruptions.
- *It is not a tool for price management or long-term supply issues...*”

- IEA, 2007

Complexity: Managing the unmanageable

- “It is questionable *whether an adequate organizational structure exists* which could effectively manage a [major oil supply] crisis.”

- GAO, 1981

Complexity & inaction

- “Fuel shortages is something we as a government *just do not want to deal with*, probably because *it is so complex*.”
- Since Katrina *I am not aware of any efforts to tackle planning for fuel shortages*. I guess everyone just assumes it will be there when we need it. Unfortunately *nothing is further from the truth*.”

» - personal communication from former Director of Emergency Management, State of Mississippi, Oct. 2009



Maintaining civil order

- “At times of shortage of fuel... the combination of higher prices and restricted availability can lead to volatile public behaviour.
- For example, inevitably, queues form outside petrol stations and this is a recipe for civil disorder.”

ACIL Tasman final report, Dec. 2004



LIFE

Summary of key arguments:

- Peak oil is being examined and taken seriously by military analysts, but not by civilian authorities.
- Export decline remains an overlooked (and urgent) aspect of the peak oil threat.
- North America remains highly vulnerable to an LFE disruption... it's not on the radar of emergency planners... existing (decades-old) plans are clearly impractical.
- Given the decades which are required for effective mitigation, these issues are in urgent need of scrutiny by both civilian and military analysts.



Thank you for your interest.

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