

## Peak Oil and Its Influence on Health



The coming fossil fuel predicament and how it relates to health, and health care delivery

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Public Health WORKS, June 17, 2008

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## Britain, Sept 2000, 8 days, no fuel



- Discharged patients unable to be picked up by relatives.
- Closure of outpatients departments.
- Shortages of blood products, drugs, sutures and linen.
- Cancellation of all elective and non-emergency surgery.
- Hospital staff shortages because they couldn't get to work.
- Emergency ambulance travel only; no transfers.
- Inability of community nurses, GPs and other community-based workers to visit their patients.
- Accumulation of contaminated waste
- Problem worse in rural areas
- SHORT TERM, fuel only, not petroleum products.

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## What I am going to talk about?



- Why is oil so important to us
- Current oil production and "peak oil"
- Consequences of peak oil
- Oil in public health
- Some questions
- What can we do?

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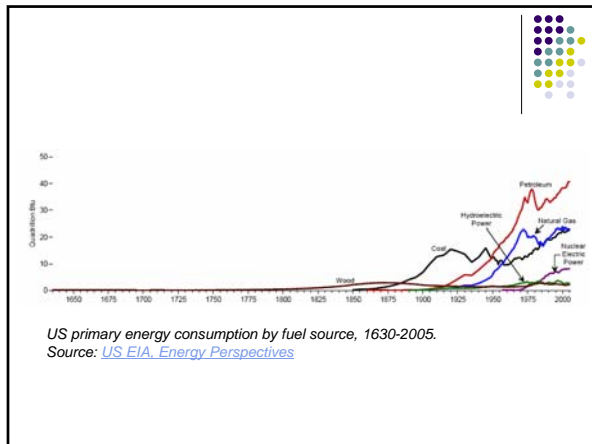
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### Oil is our economic lifeblood

- 80-95% of all transport is fuelled by oil products
- 50-75% of all oil is used for transportation
- All petrochemicals are produced from oil
- 99% of all lubrication is done with oil products
- 95% of all goods in the shops get there using oil
- 99% of our food involves oil or gas for fertilisers, agrochemicals, tilling, cultivation and transport
- Oil is the most important source of primary energy on the planet accounting for 36.4% of all energy

Taken from: Chris Skrebowski: Peak Oil, the emerging reality

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### Petrochemicals: a few uses

Adhesives, air conditioners, ammonia, anaesthetics, anti-histamines, antiseptics, artificial turf, asphalt, aspirin, balloons, bandages, boats, bottles, bras, bubble gum, butane, cameras, candles, car batteries, car bodies, carpet, cassette tapes, caulking, CDs, chewing gum, cold, combs/brushes, computers, contacts, cortisone, crayons, cream, denture adhesives, deodorant, detergents, dice, dishwashing liquid, dresses, dryers, electric blankets, electrician's tape, fertilisers, fishing lures, fishing nets, fishing rods, floor wax, footballs, glues, glycerin, golf balls, guitar strings, hair, hair colouring, hair curlers, hearing aids, heart valves, heating oil, house paint, ice chests, ink, insect repellent, insulation, jet fuel, life jackets, linoleum, lip balm, lipstick, loudspeakers, medicines, mops, motor oil, motorcycle helmets, movie film, nail polish, nylons, oil filters, paddles, paint brushes, paints, parachutes, paraffin, pens, perfumes, pesticides, petroleum jelly, pharmaceuticals, plastic chairs, plastic cups, plastic forks, plastic wrap, plastics, plywood adhesives, refrigerators, roller-skate wheels, roofing paper, synthetic rubber, rubber cement, rubbish bags, running shoes, saccharine, scrubs, seals, shingles, shirts (non-cotton), shoe polish, shoes, shower curtains, solvents, spectacles, splints, stereos, sweaters, syringes, table tennis balls, tape recorders, telephones, tennis rackets, thermos, tights, tires, toilet seats, toners, toothpaste, transparencies, transparent tape, TV cabinets, typewriter/computer ribbons, umbrellas, upholstery, vaporisers, vinyl gloves, vitamin capsules, volleyballs, water pipes, water skis, wax, wax paper, X-ray dyes

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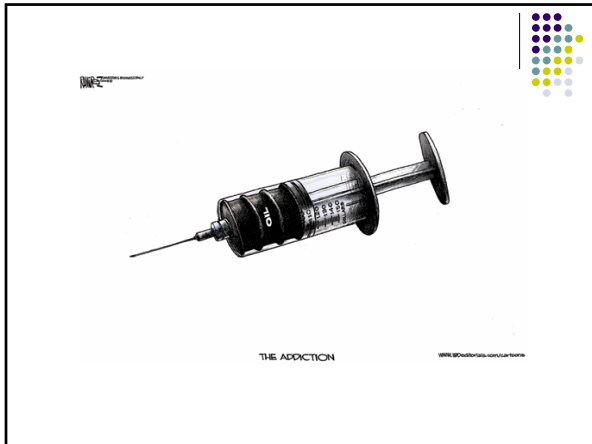
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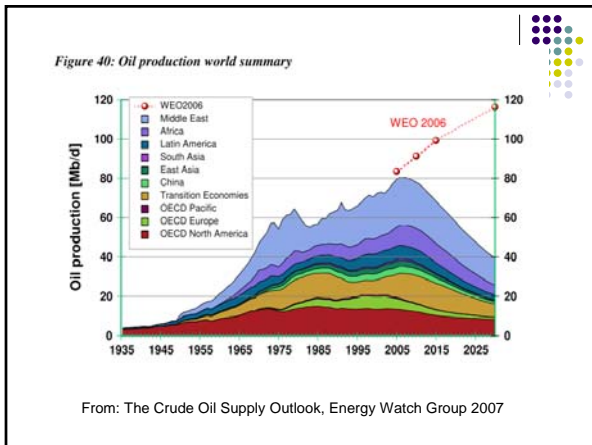
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**David Hughes**  
Geological Survey of Canada

- "Oil is a global commodity so even though it looks like domestic production, thanks to the oil sands, will be sufficient for our own needs out to 2030 (forgetting NAFTA), **Canada will not be impervious to the civilization defining global economic shocks related to peak oil**, which is likely to occur before 2015 and some credible observers think it has already happened. **Peak North American natural gas has already happened** and we use a lot of it in the oil sands. I think **we will definitely see the impacts before 2015 and probably sooner** - however even 2015 is like tomorrow from a mitigation point of view." email: Dec 7, 2007

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## What is Peak Oil?



- **Peak oil:** the state when the world's oil supply reaches its highest sustainable output, supply cannot grow, production plateaus and eventually absolute supply starts to go into a permanent (slow, we hope) decline.
- **Due to:**
  - Diminishing oil production, less oil available
  - Technically harder to get at (under the sea, etc.)
  - Increased petroleum demand (e.g. China & India)
  - Lack of refining capacity
  - Political instability
- **Final Common Pathway:** scarcity of **end-use** supply. Lots still in the ground. Demand rises, leading to rise in price of oil.
- **Does NOT mean** we are out of oil! **BUT It DOES mean** that petroleum supplies will become more and more scarce and eventually become functionally irrelevant.

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## Factories close, supermarkets empty and jets run out of fuel as truckers' strike bites



The Guardian, June 12 2008

- Lisbon **airport ran out of fuel**, car **factories shut down** and petrol stations and supermarkets reported **shortages**.
- **Widespread mayhem** and the mood turned ugly; **two strikers died** in clashes on picket lines.
- Only emergency, military or state flights were allowed out of Portela airport
- **Supermarkets reported dwindling supplies**. Spain's two biggest wholesale markets, reported **deliveries of meat, fish and fruit were almost at a standstill**.
- As **panic buying** among motorists continued, petrol stations were running dry.
- Three car firms, Seat, Nissan and Mercedes, **suspended production** because of parts shortages.
- Some ferries from the Balearic islands to mainland Spain were **cancelled due to lack of fuel**.
- The action is being closely watched in France, Italy, Britain and other countries where the threat of a similar strike looms. Diesel prices have shot up on average around 40% over the past year, and **truckers say profits have been all but wiped out**.
- The mood among strikers was increasingly turning bitter. Scores of pickets were arrested in clashes with police and two drivers were killed at blockades.

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## Factories Close, Supermarkets Empty and Jets Run Out of Fuel as Truckers' Strike Bites



The Guardian, Thursday June 12 2008

**Job Losses and Oil Surge Spread Economic Gloom**  
New York Times, June 7, 2008

**The other global crisis: rush to biofuels is driving up price of food**  
Independent 12 April 2008

**Rural U.S. Takes Worst Hit as Gas Tops \$4 Average**  
New York Times, June 9, 2008

**North Anoka Meals on Wheels to fold, citing funding shortfall**  
Pioneer Press, June 6, 2008

**Pain doesn't stop at the pump. Higher costs of petroleum-based products having a domino effect.**  
Houston Chronicle, June 8, 2008

**Transit use soars – budget heads the other way**  
San Francisco Chronicle, June 2, 2008

**High cost and demand for fertilizer scares farmers**, Associated Press, June 4, 2008

**Summer airfares double, triple, quadruple** - USATODAY.com, June 5, 2008

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### Some Airlines affected by oil costs



- 12-31 - **MaxJet** ceases operations - 450 employees
- 03-31 - **Champion Air** shuts down - 55 employees
- 04-01 - **Aloha Airlines** ceases operations - 1900 employees
- 04-03 - **ATA Airlines** gone - 2200 employees
- 04-05 - **SkyBus** closes - 450 employees
- 04-08 - **Oasis Airlines** - 700 employees
- 04-11 - **Frontier Airlines** - 6,000 employees - files for Chapter 11
- 04-27 - **Eos Airlines** - files for Chapter 11
- 05-27 - **American Airlines** cuts flights by 12%
- 05-31 - **Champion Airlines** shuts down - 735 employees
- 06-30 - **Air Midwest** - Shut down (Subsidiary of Mesa Air Lines)
- 06-03 - **SilverJet** - 300 employees
- 06-04 - **TED Airlines** shuts down (United Division)
- 06-04 - **United** retires 100 planes and cuts 1,100 employees - cuts flights by 14%
- 06-05 - **Continental** retires 67 planes and cuts 3,000 employees - cuts flights by 11%
- 06-06 - **Air Lingus** cuts flights by 15%
- 06-07 - **China Airlines** cuts flights by 10%

~17000 employees; ? How many families  
 From: The Oil Drum, Drumbeat, June 9, 2008

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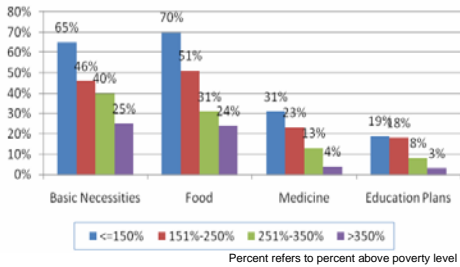
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**Chart ES-4. Percent of Respondents Who Said Increased Energy and Gas Costs Impacted Purchases and Plans**



NEADA:National Energy Assistance Directors' Association (USA) National Energy Assistance Survey Report, June 6, 2008

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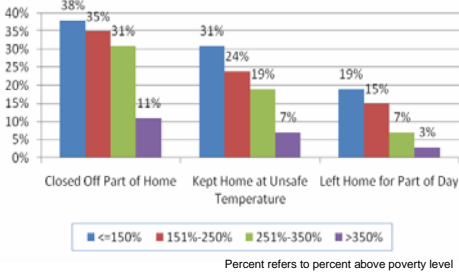
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**Chart ES-5. Percent of Respondents Who Said Increased Home Energy and Gas Costs Impacted Energy Behavior**



NEADA:National Energy Assistance Directors' Association (USA) National Energy Assistance Survey Report, June 6, 2008

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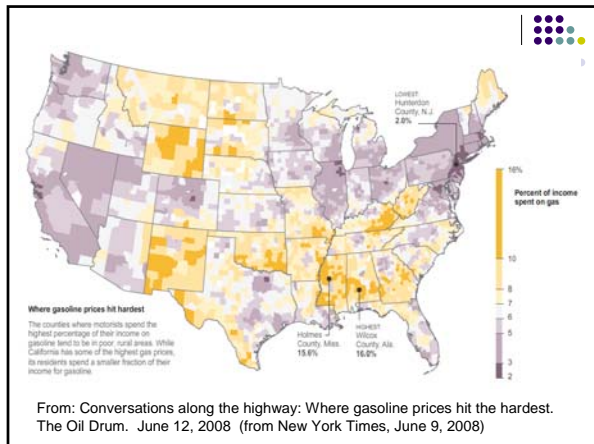
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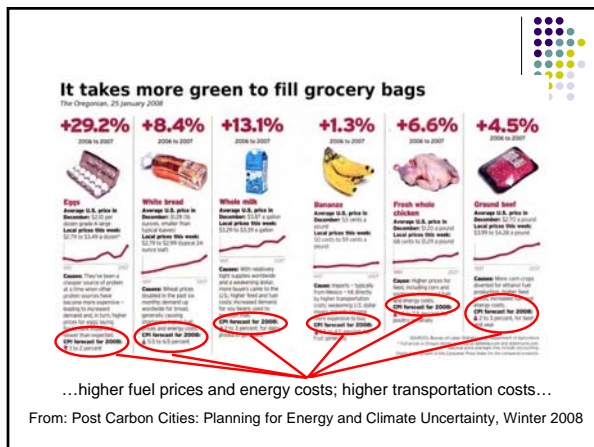
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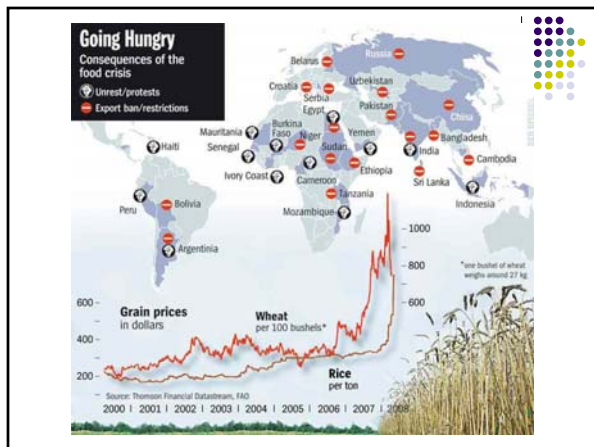
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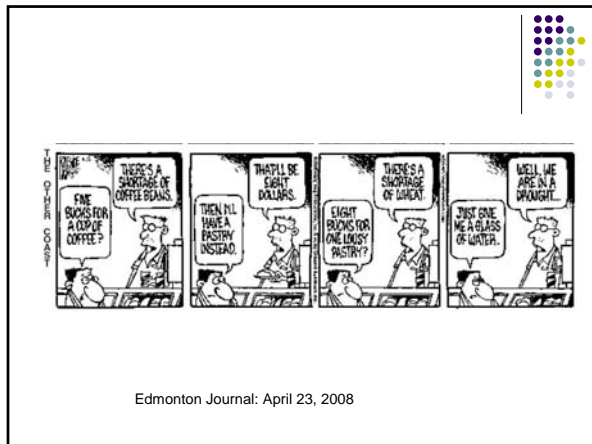
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### Peak Oil affects our health and health care services!

- **Health Care System**
  - **People:** the MOST important factor
  - **Medicare:** the safety net
  - **Hospital:** the refuge for serious illness
  - **Doctor's offices:** the frontline
  - **Community laboratories**
  - **Emergency services:** the frontline
  - **Long term care facilities:** the end & safety
  - **Teaching & Research:** the future
  - **Administration:** the impossible
  - **Public Health:** the silent partner

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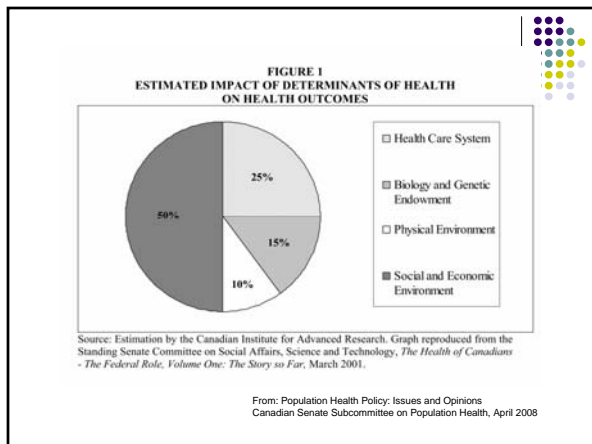
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### Peak Oil affects our health and health care services!



- PO affects the economy, our income and thus socio-economic status
- PO leads to recession, depression, unemployment
- PO leads to social disruption and instability
- PO leads to diminished government goods and services
  - Social security                      Education
  - Financial stability                    Infrastructure
  - Business                                Leadership
  - Health care                             Research

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### Peak Oil affects our health and health care services!



- PO affects gas prices, and where (& how) we live: suburbs, city, small towns
- PO affects food production: fuel, fertilizer, pesticides, prices
- PO affects fuel prices: heating in winter and cooling in summer
- PO affects how we see ourselves
- PO is a pervasive, progressive, potent modifier of behavior. It will not ease up. Our lifestyles WILL change.

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### Peak Oil affects our health and health care services!



- PO affects transportation: for supplies, services (food, laundry, waste), emergency, staff, patients, home visits
- PO affects heating, cooling, power
- PO affects medical supplies: drugs, equipment, packaging, clothing: everything.
- PO affects services: communication, computers, lights
- PO will make us re-examine the meaning of health in today's society
- PO will make us re-examine the mechanisms of health care delivery.
- PO will alter how we do research and how we train our health care professionals
- PO will force us to 'power down' health care delivery.

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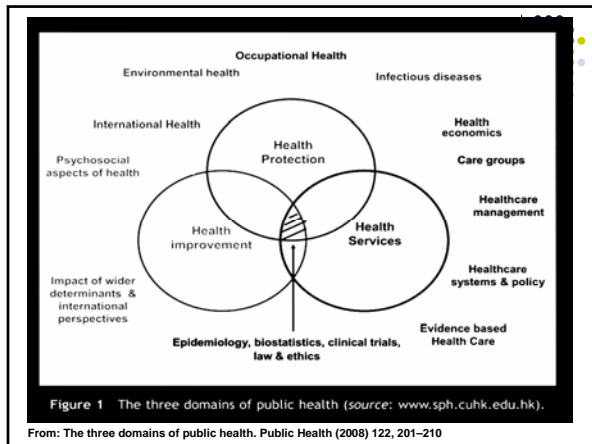
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- ### Public health care system
- **Assessment: how affected by Peak Oil**
    - Assess community health needs
    - Investigate health hazards and effects
    - Analyze health factors
  - **Policy development**
    - Advocate for community needs and issues
    - Prioritize health needs
    - Plan and develop policies
  - **Assurance**
    - Manage resources
    - Implement programs
    - Evaluate programs
    - Inform the public

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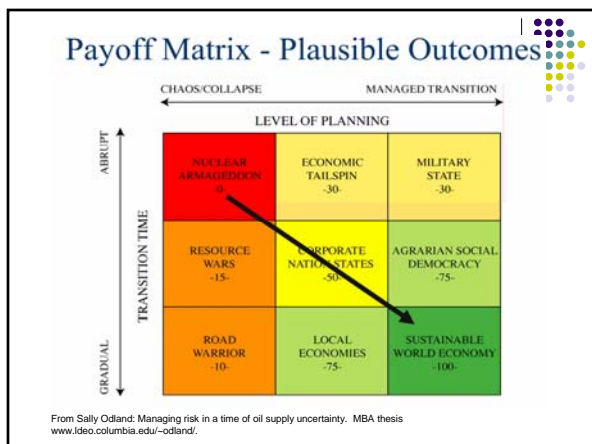
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### A Few Questions-1



- What are the effects of petroleum scarcity:
  - On the health of Canadians? Who are the vulnerable?
  - On health care?
  - On health care supplies and services?
  - On public health care?
  - On the education of health professional
  - On medical research

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### A Few Questions - 2



- How does the health care system adapt to a world of higher oil costs and eventual petroleum scarcity?
- How do we ensure that people have effective local and equal health care access?
- How do we help society (and ourselves) to maintain morale in the face of what may seem to be a deepening hole of uncertainty and instability?
- Should we create some peak oil scenarios to see our vulnerabilities?

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### A Few Questions - 3



- What's the worst that can happen?
  - Is it good public health planning to NOT think about the worst outcome?
- How do we go from Capital Health to "low/no oil" health care?
  - Physically
  - Psychologically
  - Politically
- Is it realistic to do so?
- Is it realistic NOT to do so?
- How does this fit in with climate change & ecological overshoot

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*Faced with the choice between changing one's mind  
and proving that there is no need to do so, almost  
everyone gets busy on the proof.*

John Kenneth Galbraith

*We would rather be ruined than changed;  
We would rather die in our dread  
Than climb the cross of the moment  
And let our illusions die.*

W.H. Auden



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## What can we do now?

- Think about it, but not forever.
- Conserve, economize, improve efficiency
- Re-localize
- Multiple source our supplies
- Ask questions, discuss it
- Be willing to accept the hard to accept. Just because it is 'unbelievable' doesn't mean it won't happen.
- Life WILL be different. We are not going back to the 1950's, we are going forward to the 2050's.
- Act: But FIRST → TAKE THE SURVEY!!



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## Survey

- To raise awareness
- To get your opinion as to how PO will affect public health services
- Feel out opinion for a workshop
- Not confidential, but identity not essential.
- Letter
- <http://www.surveymethods.com/EndUser.aspx?97B3DFC69ED0C3C6>
- My email: [dspady@ualberta.ca](mailto:dspady@ualberta.ca)



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