



Drumbeat: May 17, 2013

Posted by [Leanan](#) on May 17, 2013 - 9:30am

[Avoiding the 'Energy Abyss'](#)

John Hofmeister doesn't call it 'peak oil,' instead he calls it the 'energy abyss,' the point at which the global economy ceases to grow because the oil industry can no longer meet demand.

Hofmeister is the former president of Shell Oil, the same Shell Oil that is preparing to drill the deepest hole yet drilled to reach oil and gas 200 miles out in the Gulf of Mexico in 9,500 feet (2,900m) of water, surpassing the working depth of Shell's Perdido rig, also located out in the Gulf and producing around 100,000 barrels a day. The cost of that rig: \$3 billion.

In his 2010 book, *Why We Hate The Oil Companies, Straight talk from an energy insider*, he wrote the following:

"It's inevitable. The industry that produces oil can't produce enough, unless the world doesn't grow. It's possible that we will have such expensive oil that we will stymie growth. How many people will suffer? How many poor will become poorer, while rich become richer because we have failed rational tests of creating alternative competitive fuels? We have a choice to condemn ourselves to an energy abyss in the name of the status quo and lack of enlightened leadership, or we can choose to develop alternatives.

Why aren't we more thoughtful about the future? Why don't we begin the journey towards a range of alternatives that delivers increased national security, increased economic security, and multiple choice for consumers?

I think in this regard, we are missing in the whole construct, a meaningful voice of government as an intermediary and an enabler to a better future when it comes to fuel choice. The US has been crippled for 7 years by high-priced fuel; the government has done nothing to speak of to address the issue."

[The Peak Oil Crisis: Supply Shock](#)

A new phrase, "supply shock," entered the lexicon of the global oil business this week when the International Energy Agency reported that unexpectedly rapid growth in tight oil production from North Dakota and Texas is leading to profound changes in the global energy markets.

U.S. oil production which grew by 800,000 barrels a day (b/d) last year is now expected to grow by another 2.3 million b/d by 2018. In addition another 1.3 million b/d increase

from Canada's oil sands is expected. This 3.9 million b/d accounts for nearly half of the 8.4 million b/d increase in global production of combustible liquids that the IEA is expecting to be available by the end of the decade.

[Oil Price-Fixing Probe Widens as Neste Helps EU Inquiry](#)

The European oil price-fixing probe expanded as Neste Oil Oyj, Finland's only refiner, said it was asked to provide information regarding potential manipulation of global crude and biofuel markets.

The widening investigation comes as Pannonia Ethanol, a Hungarian biofuel producer, said it lodged a complaint with the European Commission last year after data-pricing company Platts denied requests to contribute to its price-setting process. Meanwhile, Statoil ASA, one of the European oil companies that has been ensnared in the investigation, said it has "zero tolerance" for breaches of rules.

Royal Dutch Shell Plc, BP Plc and Statoil, three of Europe's biggest oil explorers, are being investigated by European Commission officials about potential manipulation of prices in the \$3.4 trillion-a-year global crude market. Platts, owned by McGraw Hill Financial Inc., also is a target in the inquiry. The probe, which extends to undisclosed crude-derived products and biofuels, shows how some energy markets lack the transparency of stocks and U.S. corporate bonds.

[WTI Fluctuates; Poised for First Weekly Drop in a Month](#)

West Texas Intermediate crude headed for the first weekly decline in a month after U.S. consumption of gasoline and distillate fuels dropped.

Futures fluctuated in New York after rising yesterday by the most in six days. U.S. gasoline consumption shrank 1.2 percent last week and demand for distillate fuels, including heating oil and diesel, decreased 2.4 percent, Energy Department data show. WTI may drop next week amid concern that weaker economic growth will reduce fuel use, according to a Bloomberg News survey.

"We still expect renewed downside pressure," Andrey Kryuchenkov, an analyst at VTB Capital in London, said in an e-mail. "Demand is yet to improve ahead of summer" in the U.S. and Europe, he said.

[Refinery woes cause nationwide gas price spike](#)

Troubles at several oil refineries are driving gasoline prices sharply higher in the Midwest, and the regional shortages are expected to boost pump prices nationwide.

While the USA may be dripping in new found crude oil deposits and early May supplies were at their highest levels since the early 1930s, issues at a handful of refineries that turn crude into gasoline and diesel fuel underscore how kinks in the supply chain can

cause quick surges in what consumers pay at the pump.

[Consumer prices take biggest drop in 4 years, thanks to gas prices](#)

A sharp drop in gasoline costs led consumer prices to tumble in April by the most in over four years, while a gauge of underlying inflation was so weak it could worry the Federal Reserve.

The Labor Department said on Thursday its Consumer Price Index slipped 0.4 percent, the biggest decline since December 2008 when America was suffering some of the darkest days of its financial crisis. Analysts had expected a more modest 0.2 percent decline in last month's prices.

[Canada's inflation at just 0.4%, slowest since 2009](#)

Canada's annual inflation rate in April slowed to 0.4 per cent on declining gas prices and lower prices for passenger vehicles.

[Does U.S. oil boom mean lower prices at the pump?](#)

The International Energy Agency says the oil fields of North Dakota are turning the global oil market on its head. Canada's oil sands, too, to be fair. The agency's latest report on world oil supplies says North America's oil boom is turning out to be even bigger than predicted. Within five years, the U.S. and Canada will be meeting most of the world's new oil demand.

Whoa. Wasn't it just a few years ago we were fretting about "peak oil?"

[Fuel Oil Rally to End With Europe Swamping Asia](#)

The premium traders in Asia are paying for the earliest deliveries of fuel oil is poised to slide from an eight-month high as Europe floods the region with excess supplies and Chinese refinery demand wanes.

[Global LNG-Latin America demand drives global spot market](#)

PERTH/LONDON: Latin American demand for liquefied natural gas (LNG) continued to dominate the global spot market this week, with Mexico's monthly LNG imports expected to hit a seven-year high in May.

Mexico's state-run power monopoly CFE will buy 18 LNG cargoes from energy trader Trafigura due to be shipped in 2013 and 2014 as piped natural gas supply from the

United States fails to keep up with demand.

[Nigeria LNG declares force majeure](#)

Nigeria LNG has declared force majeure on its liquefied natural gas exports from at Bonny Island a day after Shell halted its supplies to the Bonny Island facility over a reported leak.

[LPG Ship Rates Head for Biggest-Ever Weekly Gain on U.S. Cargoes](#)

The cost of shipping liquefied petroleum gas headed for the biggest weekly gain on record as surging U.S. exports of the cooking fuel and chemicals feedstock sap vessel supply.

Rates for very large gas carriers already jumped 24 percent to \$68 a metric ton since May 10, according to the Baltic Exchange, a London-based publisher of shipping prices on more than 50 maritime routes. That would mark the largest weekly rally in data going back to 2005 if costs stay the same today or rise, according to the bourse.

[Making choices early gives room to move in the future](#)

If we believe endless growth on a finite planet is possible, then it's all good. If we reckon the age of cheap oil will never end, we can party on.

But if we think the climate scientists are on to something, that resource use deserves special care and there may be some economic bumps ahead, then a rethink of our way of living is warranted.

[China State Grid Buys Stake in SP AusNet for A\\$824 Million](#)

China State Grid Corp., the nation's largest power distributor, agreed to pay Singapore Power Ltd. A\$824 million (\$810 million) for 19.9 percent of Australia's SP AusNet as part of its \$50 billion global acquisition plan.

The Chinese state-owned company will also acquire 60 percent of Singapore Power's other Australian energy and infrastructure assets held by SPI (Australia) Assets Pty, the Singaporean company said today in a statement. That closely held unit, known as Jemena, manages more than A\$5 billion of assets and had A\$1.7 billion in sales in 2012, according to its website.

[Nova Chemicals to start using shale gas in Ontario](#)

A major Abu Dhabi-owned petrochemical complex is due to become one of the first in the world to benefit from North America's shale bonanza.

Nova Chemicals, the Calgary-based company owned by the emirate's International Petroleum Investment Company, is due to start receiving gas from Pennsylvania's Marcellus field, a major shale deposit, by the end of this year.

[Pertamina looks to Talisman's expertise in Indonesian shale gas block](#)

JAKARTA — State energy firm Pertamina is planning to tap into the expertise of Canada's Talisman Energy Inc as it embarks on Indonesia's first shale gas extraction project, a company official said on Friday.

[Energy Future's Woes Stunt Oncor's Power Growth Ambitions](#)

Oncor Electric Delivery Co., Texas' largest power utility, may not be able to take full advantage of the nation's fastest-growing electricity market because of capital constraints lingering from its parent's 2007 leveraged buyout.

Oncor would have to cut dividend payments to Energy Future Holdings Corp. if the Texas electricity distributor wanted to fund another major project in the state where it serves more than 3 million homes and business, Chief Executive Officer and Chairman Bob Shapard said.

[Kuwait suspends executives over Dow Chemical payment](#)

Kuwait City: Kuwait's cabinet suspended on Thursday several senior oil executives over a \$2.2 billion penalty paid to Dow Chemical for scrapping a joint venture and ordered a judicial investigation into the matter, an official statement said.

[Green party has decades-in-making breakthrough in B.C. election](#)

VANCOUVER - The British Columbia Green party made a historic breakthrough in the provincial election this week, powered on what appeared to be opposition to oil pipelines and concerns about global warming.

Andrew Weaver, a University of Victoria professor and climate change expert, defeated four-term Liberal cabinet minister Ida Chong in the Vancouver Island riding of Oak Bay-Gordon Head on southern Vancouver Island.

"It is very, very exciting," a tired, but elated Weaver said Wednesday.

But the reaction among environmental groups to the Green victory was tempered by the surprising loss of the B.C. New Democrats and their no-to-pipelines platform.

[Harper Seeks to Build Keystone XL Support on U.S. Visit](#)

Prime Minister Stephen Harper is seeking to counter opposition to TransCanada Corp.'s Keystone XL pipeline, a project crucial for boosting Canada's economy and Harper's plans to make the country an energy superpower to rival Saudi Arabia.

Harper, at an event today moderated by former U.S. Treasury Secretary Robert Rubin for the Council on Foreign Relations in New York, said there is a strong case for the U.S. government to approve the pipeline, citing the prospects for job creation and North American energy independence.

[Keystone XL pipeline 'needs to go ahead,' Harper tells U.S.](#)

Prime Minister Stephen Harper told an American audience today that the Keystone XL pipeline "absolutely needs to go ahead."

Harper made the pipeline pitch while taking questions at the Council on Foreign Relations in New York City.

[Payout official set for surge in BP spill claims](#)

New Orleans - The deadline for claims against BP Plc in connection with the 2010 Gulf of Mexico oil spill is 11 months away, but the man responsible for paying the claims said on Thursday he is already bracing for a late surge in filings.

[Study finds use of dispersants can increase oil penetration into sandy marine sediments](#)

A Florida State University researcher working as part of the Gulf of Mexico Research Initiative (GoMRI) investigated the effects of dispersants on the movement of crude oil through water-saturated marine sand and found that dispersants potentially facilitate penetration of oil components into the seabed, where oxygen concentrations may affect the degradation of the oil.

[Fracking on Federal Lands Said to Get Scaled-Back Rule Proposal](#)

Gas drillers using hydraulic fracturing on federal lands would be able to use an industry-sponsored website to disclose the chemicals they use and won't need to perform cement tests on each well, according to a revised proposal from the Interior Department set for release today.

Drillers will be permitted to use a variety of methods to test the integrity of their wells, according to a fact sheet from the Interior Department, which was provided to Bloomberg by an outside representative.

[Edison, Mitsubishi hit roadblock on San Onofre's future](#)

A flurry of letters that went back and forth between Southern California Edison and Mitsubishi Heavy Industries late last year reveal the serious hurdles that stand in the way of the San Onofre nuclear power plant's long-term future.

The plant had been offline at that point for nearly a year because of unusual wear on tubes that carry radioactive water in the plant's newly replaced steam generators, which were designed and manufactured by Mitsubishi.

[Teenager Designs Safer Nuclear Power Plants](#)

Do nuclear power plants need a redesign? Critics of nuclear energy seem to think so, and so does nuclear energy advocate, Taylor Wilson. A physics wunderkind, Wilson became the youngest person to ever create fusion at age 14. And since graduating from high school last year, he's devoted himself to finding innovative solutions to the world's biggest problems.

The now nineteen-year-old Wilson recently spoke to a TED audience about his design for a small, modular fission reactor that is both less expensive and much safer to operate than today's nuclear reactors.

[Can an abandoned warehouse transform Ivy City?](#)

A streetcar may be a longshot, and Lewis and Swanson are both skeptical that it'd help Ivy City residents. But up to now, the neighborhood has been taunted by transit it doesn't benefit from: the Amtrak tracks that box in a neighborhood that lacks easy access to any Metro or intercity rail stations, and the whizzing cars along New York Avenue that rarely have occasion to pull off in Ivy City. Adding destination retail, a community-serving supermarket, greater transportation options, and jobs in the office building—Jemal says there could be up to 5,000 people working there—could change all that. Tregoning says the kind of retail the Hecht's project might be able to attract would “allow that community to punch above its weight.” And Millstein hopes that it could motivate the city to find other locations for bus and truck parking as those Ivy City lots become more valuable as potential retail or housing development sites.

[As auto sales rebound, so do repossessions](#)

An increase in auto repossessions due to borrowers defaulting on their car loans is raising new questions about whether the auto industry is going too far selling new cars and trucks to those with subprime credit records.

According to Experian Automotive, the percentage of auto repos in the first quarter

jumped 16.9 percent, and the average charge-off for bad loans jumped more than \$600 to \$7,401.

[Tesla to Raise More Than \\$1 Billion to Repay U.S. Loan](#)

Tesla Motors Inc., the electric-car maker run by Elon Musk, will use proceeds from a sale of shares and debt to repay its U.S. loan as much as nine years ahead of schedule, a victory for a maligned Energy Department program.

[Tesla Motors As The 4th U.S. Automaker, And Why The Future Is Bright](#)

Tesla Motors has been a fairly controversial stock ever since its 2010 IPO, as its critics and supporters argue over Tesla's profit potential, its relevance, and even the utility of its cars. For Tesla's critics, what is effectively Elon Musk's most famous venture is little more than a pipe dream, a futile exercise in unworkable technology financed by taxpayers. And to Tesla's supporters, the company represents a paradigm shift in the automobile business, and they believe that the company will emerge as America's 4th automaker, alongside the "Big 3" of Detroit. With Tesla's Q1 2013 results on May 8, we believe that Tesla will indeed take its place as America's 4th automobile manufacturer. Tesla has created a recipe for success in the automobile market of today, as well as the automobile market of tomorrow, with clear strategies for both.

[A reality check on Tesla](#)

Even after overlooking all the Model S' objective blemishes (the team over at CR mentioned its lack of certain high-end features, stereo issues and parasitic battery energy losses when parked), electric vehicles lack a national infrastructure of charging points, accessible cross-country range and remain cost prohibitive for most consumers. These are major hurdles, preventing tens of millions from even considering vehicles like the Model S. Don't feel sorry for just the electric crowd, either. The same hindrances are lodged at other alternative-energy vehicles, such as those powered by hydrogen and natural gas.

Tesla's high-scoring 85 kwh Model S, arguably at the top of its pure-electric segment, is limited to a range of about 265 miles. Even though it may be plugged into any common 110-volt electrical outlet for a slow charge, high-speed electric vehicle charging stations have only sprung up in major population centers or along busy highway corridors, meaning a lack of foresight before heading down a less-traveled road may initiate a tow truck encounter.

[Used Fisker Karma EVs are the 'new Delorean' as prices tumble](#)

As used car deals go, this is one to make you think twice. Used Fisker Karmas, which sold for \$103,000 just a year ago as new models, are now being sold for roughly half price. In some cases, those trying to sell the luxury extended-range electric car on eBay

cannot even get bids above \$50,000.

[World Bank's IFC agrees to support Masdar projects](#)

Masdar and the International Finance Corporation have penned an agreement that could see the World Bank subsidiary provide as much as US\$1.5 billion in financing to the Abu Dhabi investor for clean energy projects around the world.

In a memorandum of understanding (MoU) announced yesterday and signed in Washington DC, the IFC and Masdar agreed to look at projects ranging from solar plants to carbon capture and storage facilities.

[SolarCity shares surge on news of financing from Goldman](#)

NEW YORK (CNMoney) - SolarCity shares are shining once again.

The solar-energy installer surged 9% Thursday after announcing an agreement with Goldman Sachs that will finance \$500 million worth of solar projects. The deal, inked last year, has already supported 26 megawatts' worth of new solar-generation power and will provide for 84 megawatts more, making it the largest agreement of its kind, SolarCity said.

[Lithium Ion Starter Batteries: Will BYD Take The Place Of A123 Systems?](#)

This contribution is about "Build your Dreams" - BYD, Warren Buffett's most famous investment in China. It's aimed at analyzing this company's possibilities of success in the introduction of Li-ion starter batteries into the micro-hybrid car market.

[China says EU solar duties to "seriously harm" trade ties](#)

BEIJING (Reuters) - China warned the European Union on Thursday that imposing duties on Chinese solar panels would "seriously harm" bilateral trade ties, upping the tone of its criticism a week after the EU said it would move ahead with hefty penalties in June.

The European Commission has agreed to impose average import duties of 47 percent on solar panels from China, according to officials, a move they say is to guard against the dumping of cheap goods in Europe.

[Washington Is Outdoing California and Texas in Renewable Energy](#)

California and Texas might be leading the nation's rollout of solar and wind power,

respectively, but Washington, where hydroelectric dams provide over 60 percent of the state's energy, was the country's biggest user of renewable power in 2011, according to new statistics released last week by the U.S. Energy Information Administration.

[A powerful use for spoiled food](#)

Kroger Co.'s anaerobic digester in Compton takes unsold food from Ralphs and Food 4 Less and converts it into 13 million kilowatt-hours of electricity a year.

[Indonesia: A Logging Ban Is Extended](#)

Indonesia has approved a two-year extension to a landmark ban on clearing primary rain forests and peatlands, an official said Thursday.

[Senate Panel Advances Nominee for E.P.A.](#)

WASHINGTON — A sharply divided Senate committee on Thursday approved the nomination of Gina McCarthy to serve as administrator of the Environmental Protection Agency.

The Environment and Public Works Committee voted to clear Ms. McCarthy by 10-to-8 along strictly partisan lines, sending the nomination to the Senate floor where Republicans are threatening to filibuster unless the E.P.A. meets demands for additional information.

[Escape Plans](#)

Why do we need a space program? Because Earth isn't going to be a safe place in the long term.

[Planting the Seed of Sustainable Farming](#)

The key question is: How do we get enough farmers to practice sustainable agriculture so that algal blooms and dead zones — whether in Lake Erie or the Gulf of Mexico — become a thing of the past? How do we actually *win*?

The answer lies in convincing farmers that sustainable agriculture is not at odds with high yields and profitability. In fact, practices like more efficient use of fertilizer and the creation (or maintenance) of wetlands and buffer strips, which filter runoff before it can reach streams and rivers, can save farmers money and help improve the quality of their soil.

[Food supply under assault as climate heats up](#)

American eaters, let's talk about the birds and the bees: The U.S. food supply – from chickens injected with arsenic to dying bee colonies – is under unprecedented siege from a blitz of man-made hazards, meaning some of your favorite treats someday may vanish from your plate, experts say.

Warmer and moister air ringing much of the planet – punctuated by droughts in other locales – is threatening the prime ingredients in many daily meals, including the maple syrup on your morning pancakes and the salmon on your evening grill as well as the wine in your glass and the chocolate on your dessert tray, according to four recent studies.

[Scientists: Climate change is real](#)

An overwhelming 97 percent of climatologists endorse the idea of human-caused global warming

As if the backing of NASA, 18 independent American scientific societies, and an intergovernmental panel established under the United Nations weren't enough to quell the protests popping up in comment sections across the Internet, a new study published in the journal *Environmental Research Letters* confirms — once again — that climatologists almost unanimously believe that climate change is directly related to human-made carbon emissions.

[Analysis: Obama climate agenda faces Supreme Court reckoning](#)

WASHINGTON (Reuters) - With a barrage of legal briefs, a coalition of business groups and Republican-leaning states are taking their fight against Obama administration climate change regulations to the U.S. Supreme Court.

The U.S. Chamber of Commerce and other industry groups, along with states such as Texas and Virginia, have filed nine petitions in recent weeks asking the justices to review four U.S. Environmental Protection Agency regulations that are designed to cut greenhouse-gas emissions.

[Africa: At UN Debate, Experts Weigh Clean Energy, Water Strategies to Halt 'Runaway' Climate Change](#)

With dire warnings likely to match or exceed the worst fears about the effects of global warming, environment and development experts gathered today at United Nations Headquarters to debate the twin challenge of curbing climate change while sustaining economic growth.

"The fundamental challenge of our time is to end extreme poverty in this generation and significantly narrow the global gap between rich and poor without ruing the

environmental basis for our survival," General Assembly President Vuk Jeremic said as he opened the Thematic Debate Sustainable Development and Climate Change: Practical Solutions in the Energy-Water Nexus.

[EU Should Scrap Energy Subsidies to Fight Warming, Poland Says](#)

The European Union should scrap fossil fuel and renewable energy subsidies and set a target to cut oil imports to remain the leader in the fight against global warming, according to Poland's environment minister.

Poland wants to keep energy prices at an affordable level, Minister Marcin Korolec said today at a conference in Warsaw attended by EU Climate Commissioner Connie Hedegaard titled "A World You Like With a Climate You Like."

"We have our ideas of how to improve EU policies and thus climate," Korolec said. "Those are simple actions that would help us have the climate you like on a budget you like."

[Artist finds inspiration in Canadian government's attempt to silence her](#)

Banned on the Hill: A True Story about Dirty Oil and Government Censorship, released this week, shows how Canadian bureaucrats tried to silence James because her views on climate change clashed with the Harper government's push to develop Alberta's tar sands.

The story is told through visual essays as well as official emails obtained by James, in which government bureaucrats discuss the troublesome artist and her work.

It also relies heavily on humour – some of it provided inadvertently by the government bureaucrats discussing what to do about James.

[James Hansen Says Greenland Melt May Cool North Atlantic](#)

Greenland ice melting at an expanding pace may begin cooling the North Atlantic and increasing the severity of storms by 2075, said James Hansen, the former NASA scientist who raised concerns about global warming in the 1980s.

"If we stay on this path where the rate of mass loss from Greenland doubles every 10 years, we would get to a situation by about 2075 or 2080 where the mass loss is so fast that it causes the whole North Atlantic to be colder," Hansen said in London.

[Tar sands make climate change 'unsolvable': Hansen](#)

Exploiting oil and gas trapped in tar sands and shale threatens to make climate change “unsolvable,” said James Hansen, the former NASA scientist who raised concerns about global warming in the 1980s.

Conventional reserves of oil, gas and coal already have more carbon embedded in them than is safe to burn without causing “dangerous” levels of warming beyond a rise of 2 degrees Celsius since industrialisation, Hansen told a U.K. panel of lawmakers today.

[Leaked Papers Show UK Government Will Backtrack on Tar Sands Extraction Being Classified As Highly Polluting](#)

The UK government has come under fire this week from both NGOs and scientists for rejecting an EU proposal to classify tar sands under the European Fuel Quality Directive (FQD) as ‘highly polluting’ – despite the fact research has shown that oil produced from the Canadian tar sands emits 3-4 times more greenhouse gases than does conventional oil.

[E.U. Considers Emission Fines on Chinese and Indian Airlines](#)

BRUSSELS — The European Commission said Thursday that Air China and Air India were among 10 Chinese and Indian airlines facing the prospect of fines and exclusion from airports in the European Union for refusing to comply with rules aimed at regulating greenhouse emissions.

The carriers are accused of not providing emissions data, as required by the European rules, and not participating in a permit system that entitles airlines to emit greenhouse gases in European airspace.

[America’s first climate refugees: Can a baked Alaska deny climate change?](#)

There is no disputing the real-time effects of climate change. Alaska is warming faster than anywhere else in America, setting off a circumpolar scramble for oil and other resources given up by the melting ice and threatening the livelihood of those who still live off the land and the sea.

“Up here in Alaska, I would say most people do not have an argument that climate change is happening because we see it,” said Douglas Causey, a wildlife biologist at the University of Alaska at Anchorage. “The debate is not whether climate change is happening. The debate is over what’s causing it.”

But those debates, and the fierce politics surrounding climate change, compromise efforts to deal with the causes and protect the people who will bear a huge part of the consequences.

[Glacier melt causes third of sea-level rise](#)

Water from the world's shrinking glaciers was responsible for almost a third of the rise in sea levels between 2003 and 2009, shows new research.

[As North Pole Melts, U.S. Arctic Policy Needs to Heat Up](#)

Behind the Arctic's intensifying geopolitics are some powerful geophysics. Climate change is causing Arctic ice to melt at an accelerating rate. Last summer, the area of ice covering the Arctic Ocean was about half what it was, on average, from 1980 to 2000. The thickness of the remaining ice had diminished by 80 percent over the same period. The late-summer Arctic could regularly be ice-free as soon as the 2030s, according to some estimates.

Although these developments portend ominous changes in the jet stream, ocean currents and global climate, they also promise great opportunities. With less ice will come more access to oil and gas: The U.S. Geological Survey estimated in 2008 that the region holds 30 percent of the world's undiscovered natural gas reserves and 13 percent of its undiscovered oil.

[Canada must rule its Arctic waves](#)

To declare and enforce our sovereignty in the huge archipelago we claim, an area the size of Western Europe, we must have ships and sailors in those waters in sufficient numbers, and with sufficient capability, to let no nation doubt our commitment. But even with the government's highly-touted shipbuilding program, the worry is that our will shall fail, and the resources wither below what was promised. We may lose our voice around the Arctic Council table, with new members clamouring to join, to stronger, more robust nations, because of Nelson's "want of frigates" — or their modern equivalent.

[Half of oil burnable in 2000-2050 to keep us within 2 degrees warming has been used up as we hit 400 ppm](#)

This article shows CO2 emission profiles from oil, analyses how regional peak oil events shape emission curves and calculates that an annual 6% oil decline rate after 2012 would be needed to satisfy the boundary condition to keep global warming to 2 degrees C, with a 25% probability of exceeding this target.



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