Today

• Mainly the Oilsands
• Alberta prefers to call them the “Oil Sands” not “Tarsands”
  • Sounds much cleaner
Oilsands

• Conventional petroleum output is probably at or close to its global peak
  • Supplemented by fracking
• Petroleum only gets more expensive from now on
• But the Athabaska oilsands hold the largest petroleum reserves outside the Middle East
Oilsands

• Exploitation of oilsands involves major environmental challenges
  • Local impacts, oil spills
  • Local energy and water demand
• Does and will affect human health, First Nations, local environments
• But some of these impacts could/should be managed
Oilsands

• Gillanders et al 2008
• Looked at 1984-2005 Landsat imagery
  • Densest, most mature woodland destroyed faster than scrub
  • Extractive area boosted from 2,500 HA 1984 to 33,000 HA in 2005
• Environmental impact easily registers in Landsat’s crude imagery.
Where the future meets the past.

The Wood Bison Viewpoint 50km ahead

Syncrude
Securing Canada's Energy Future
Oilsands

• But using petroleum involves release of CO2, a crucial greenhouse gas
• This will be the most difficult issue to manage
  • Oilsands a crucial global reserve
  • Pipelines to the coast make it easier to exploit the Oilsands
  • Harper government was keen to promote these
Oilsands

• Two major technologies for mining:
  • Open-pit surface excavation
    • Scars the landscape
  • Horizontal drilling and steam extraction
    • Less surface impact but generates contaminated water, requires energy
Oilsands

• The heavy bitumenous crude needs to be processed before it can be refined
  • Changed into a synthetic crude in an oil upgrader
  • At Lloydminster on the AB/SK border
Husky Upgrader, Lloydminster SK, Sep 2014
Oilsands

• Oilsands boom fuels population growth which outstrips social investment
  • Fort McMurray short of housing, deficient in social infrastructure
WELCOME TO
FORT McMURRAY
WE HAVE THE ENERGY
Wendy's

NOW HIRING
(FULL & PART TIME STAFF)

"WE OFFER"

* ABOVE MINIMUM WAGE
* FLEXIBLE SCHEDULES
* MEAL DISCOUNTS
* TRANSPORTATION HOME FOR STAFF WORKING LATE

APPLY WITHIN
Access To

Petro-Canada (MacKay River) 19 km
Suncor (Oil Sands) 22 km
Syncrude (Mildred Lake) 35 km

Access To

CMRL (Horizon) 46 km
Creek Energy 49 km
Shell Athabasca Sands 55 km
Oilsands

• Altering Canada
• Ottawa, Edmonton allow private sector to play a key role
  • Tendency to hand control over the resource to outsiders
• Already vital to the USA
  • Canada its largest foreign oil supplier
  • China, India keen to get a share of the action
Petroleum

- Petroleum industry has become very powerful in the west, especially in Alberta
  - Tends to dominate Alberta’s politics
  - Alberta’s elites rich with oil money
  - Makes petroleum industry difficult to regulate
  - Petroleum industry essentially controls environmental monitoring in and around the Oilsands
Pipelines

• To make it easier to exploit the Oilsands pipelines are needed to reach export markets
  • To be filled with tarsands crude diluted with chemicals (dilbit)
Pipeline to the US Gulf Coast

• TransCanada’s Keystone XL
• An thorny political issue for years in the US
  • Republicans pro, Democrats anti
  • Obama turns it down
  • Trump approved it
• States still working on it
• Koch brothers own gulf refineries short of oil
Pipelines

• With Keystone XL frustrated the industry backed by the Harper Government pushed for two other schemes:
  • Northern Gateway to Kitimat BC, via tankers to Asia
  • **Furious opposition from First Nations**, BC
Pipelines

• And another recent scheme to reverse Enbridge line 9 from Sarnia to Montreal
  • To carry oilsands dilbit
  • Through Toronto and many other parts of southern Ontario and Quebec
  • Just south of Campus
ENBRIDGE’S TAR SANDS PIPELINE PLAN:
ALL PAIN & NO GAIN FOR ONTARIO & QUEBEC
THE TAR SANDS COME TO ONTARIO

#NOLINE9
Resistance, Education and Alternatives
Sat., NOV. 17
10 am - 5 pm
@ Sydney Smith
100 St. George St, U of T

Special guests: Maude Barlow (Council of Canadians), Art Sterritt (BC Coastal First Nations), Wes Elliot (Haudenosaunee land defender) and Vanessa Gray (Aamjiwnaang First Nation) as well as experts on labour, environmental justice and Indigenous Rights.

More info: boliviaclimatetjustice@gmail.com | Groupopo.org | Facebook
Part of the CPIRG Rebuilding Bridges conference: rebuildingbridges.wordpress.com
Pipelines

- Enbridge’s line 6B ruptured in 2010 and spilled 1M Gallons + of dilbit into the Kalamazoo River
Exposed where it crosses the Rouge River in Toronto
More recently

- Collapse in oil prices brought recession to Alberta’s oilpatch
- Industry reassesses pipeline needs
  - Northern Gateway, Line 9 schemes shelved
- But the Trudeau government approved the expanded Kinder-Morgan pipeline
  - Then bought it from the company
  - Harper tried to get pipelines approved, but failed
Pipelines

- *If maintained properly* are fairly safe ways to move oil about
- The real issue is that they make it easier to exploit the Oilsands
  - And accelerate climate change
- And most of the oil refining/petrochemicals jobs will shift to the end of the pipeline
Various Problems

- **Peak oil**: globally we are entering the downward arc of the exploitation curve. Oil gets gradually more expensive to extract from now on.

- **Climate change**: we can’t afford to burn all those fossil fuels, must leave them in the ground.
  - BC: 2017, 2018 the two worst forest fire seasons on record.
  - We have perhaps 11 years to stabilise climate change.
Energy Returned on Energy Invested (EROI)

• To extract energy, you need to invest it

• Exploitation of Fossil fuels is mature
  • Energy investment will escalate as energy returns drop

• Steam extraction of Oilsands requires massive amounts of water, heat
  • Much of the natural gas output of NE BC now going to oilsands

• Oilsands approaching (or at) the energy break-even point
  • Conventional oil and gas not too far behind
Various Problems

• Fossil fuel demand is showing signs of peaking:
  • 60% of the new cars in Norway are electric
  • All new transit projects in Quebec to be electric by 2020
  • GM shifting to electric cars/self-driving cars
  • At a utility scale renewables already cheaper than coal in North America
• Renewables employ more Canadians than fossil fuels
• Millennials in Toronto not bothering to get driver’s licences
Conservative Politics in Canada

• Has apparently opted to ignore climate change
• Roll back carbon tax, cancel climate-change response, build pipelines, force them through unwilling provinces, First Nations
• While northern Alberta burns
  • Premier Kenney recalls the legislature to cancel Alberta’s carbon tax measures
• Placing Conservatives on the wrong side of history
Short-Medium Term Energy Futures

• Some First Nations looking to buy the Kinder-Morgan pipeline from Federal government
• Andrew Scheer’s $100BN national energy corridor
• Will these ever repay the investment?