

The Oil & Gas Industry in New Zealand - focus on Taranaki

Prepared for Community Information Day:

“Moving on from Oil & Gas in Aotearoa/NZ”

The Dowse Art Museum, Lower Hutt

25 March 2018

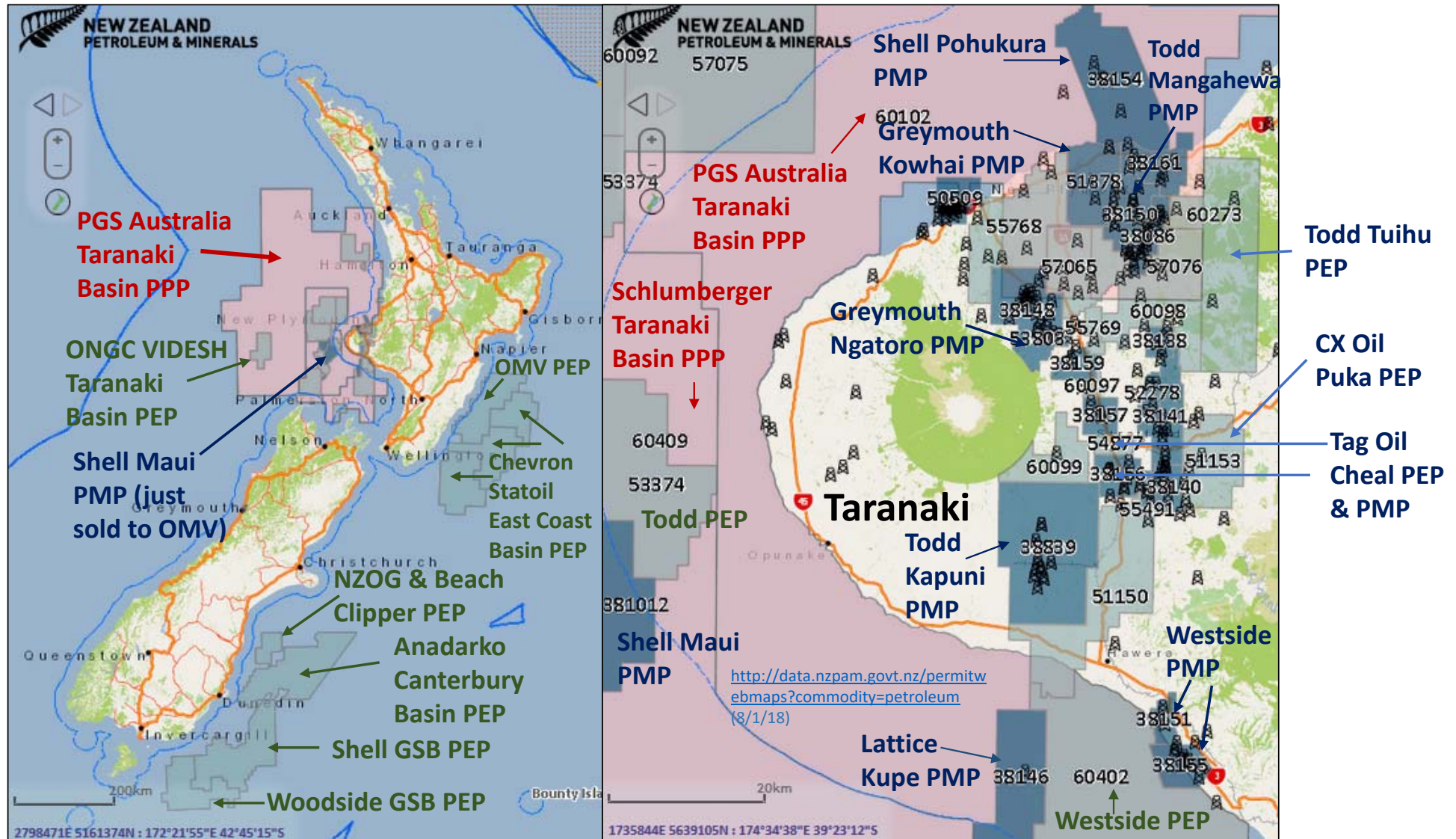
By

Catherine Cheung

Climate Justice Taranaki

www.climatejusticetaranaki.info

Petroleum Prospecting, Exploratory & Mining Permits



It's NOT just the wellsites!

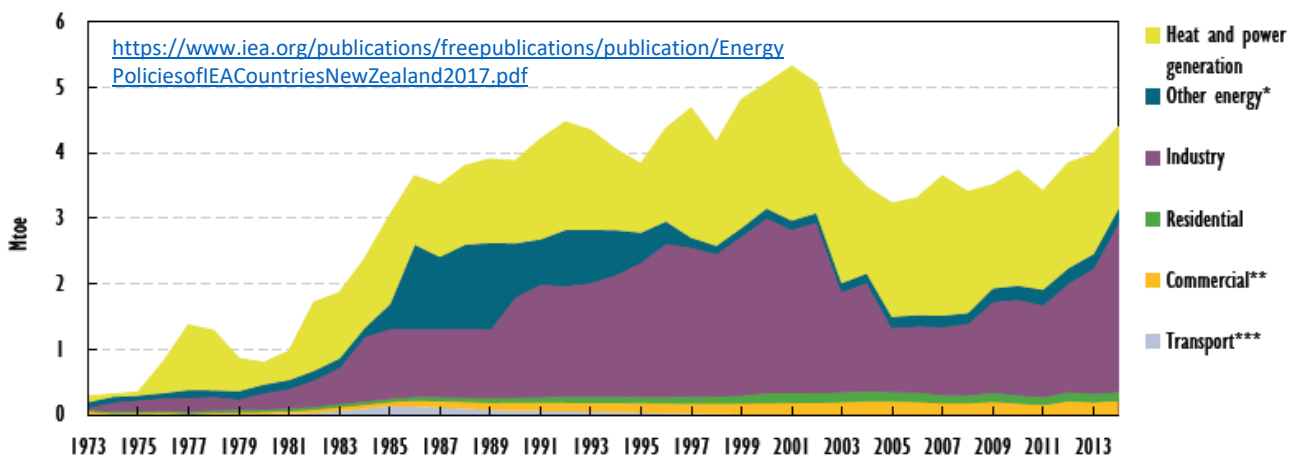
- Wells (active & abandoned)
- Production stations
- Deepwell injection sites
- Mix Bury Cover sites
- Land farms
- Worm farms
- Tank farms
- Methanex
- Ammonia-Urea plant

Half of NZ's gas production is used to make methanol for export and urea for industrial agriculture; only 3% supplies homes



<http://climatejusticetaranaki.info>

Figure 3.2 Natural gas demand by sector, 1973-2014



[R2/7995-2.0](#)

Todd Petroleum Mining Company Limited
PO Box 802, New Plymouth 4340

Commencement Date: 14 Nov 2017

Expiry Date: 01 Jun 2028

Review Dates: June annually
Activity Class: Discretionary

Location: KA-1/7/19/20 wellsite, 360 Palmer Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 2,900 mTVDss beneath the KA-1/7/19/20 wellsite

[R2/7996-2.0](#)

Todd Petroleum Mining Company Limited
PO Box 802, New Plymouth 4340

Commencement Date: 14 Nov 2017

Expiry Date: 01 Jun 2028

Review Dates: June annually
Activity Class: Discretionary

Location: KA-4/14 wellsite, 598 Palmer Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 2,900 mTVDss beneath the KA-4/14 wellsite

[R2/10545-1.0](#)

Westside New Zealand Limited
PO Box 550, Hawera 4640

Commencement Date: 22 Feb 2018

Expiry Date: 01 Jun 2034

Review Dates: June 2022, June 2028
Activity Class: Discretionary

Location: Manutahi-B wellsite, Lower Ball Road, Kakaramea (Property owner: N & M Schrider)

Application Purpose: New

To install a hydrocarbon well under the Coastal Marine Area including the associated disturbance and occupation of coastal space, at the Manutahi-B wellsite

Examples of Non-notified consents issued by the Taranaki Regional Council

<https://trc.govt.nz/assets/Documents/Meetings/ConsentsRegulatory2018/CR3001.pdf>

<https://trc.govt.nz/assets/Documents/Meetings/ConsentsRegulatory2018/CR1303-web.pdf>

Westside New Zealand Limited



Westside New Zealand Limited has been granted one 12-year offshore permit in the Taranaki Basin.

PEP 60402 has an area of 547km².

Westside New Zealand Limited is a wholly-owned subsidiary of WestSide Corporation Pty Limited, an oil and gas operator registered in Australia.

It is the operator of the Meridian gas field in Queensland, where over 40 new gas wells have been drilled since 2010.

Westside's ultimate parent company is Landbridge Group Co. Limited, based in China.

Westside has been operating the onshore Rimu and Kauri production assets in southern Taranaki since late last year, when these were acquired from former operator, Origin Energy.

Since acquiring these permits, Westside has stabilised production from the fields and is currently undertaking work to materially increase oil and gas production.

Westside also reports that it has been developing relationships with the local councils, iwi, landholders and other stakeholders within the Taranaki area, and specifically near Hawera.

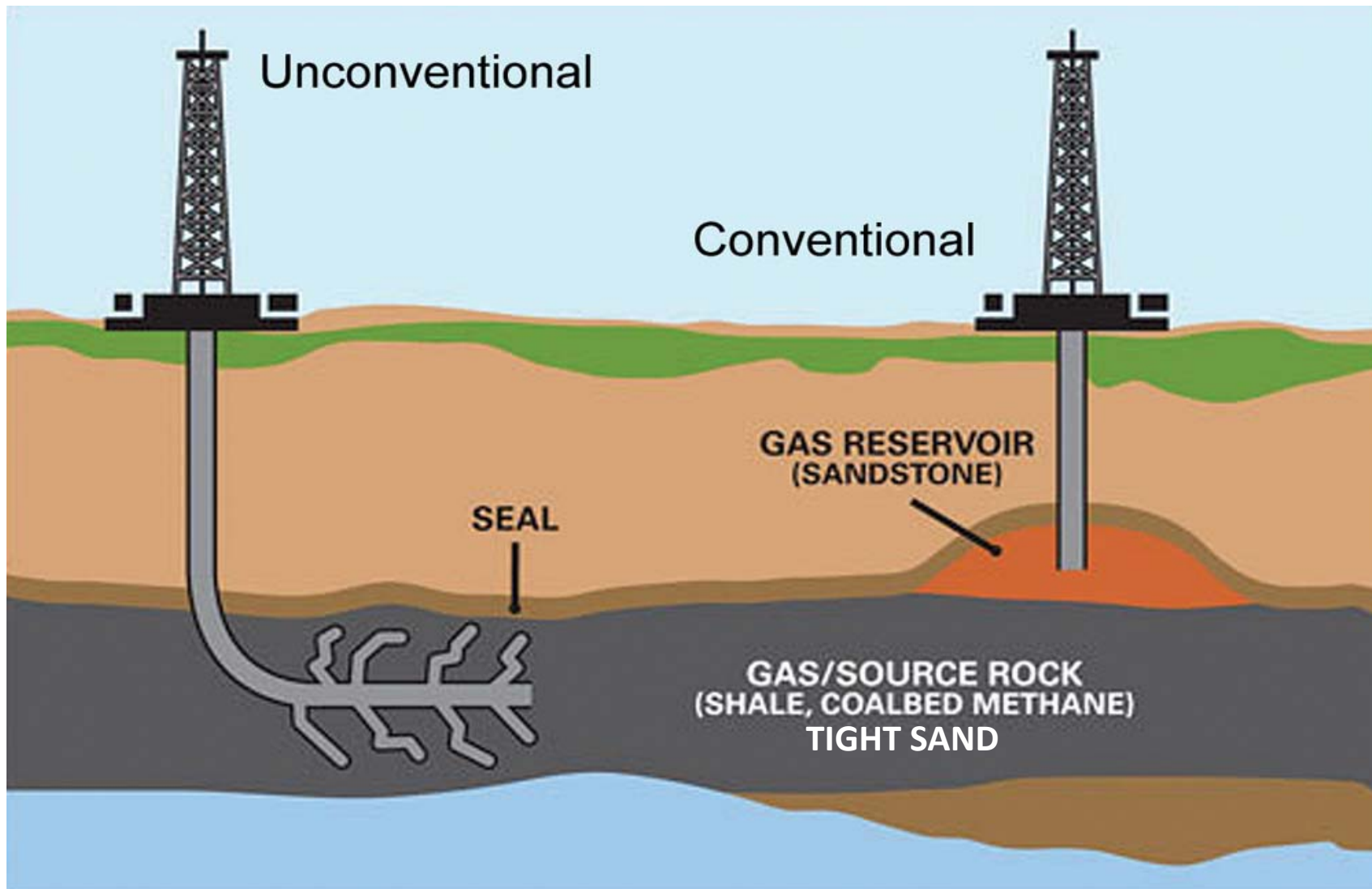
Multiple Impacts

- Environmental
- Health & safety
- Economic



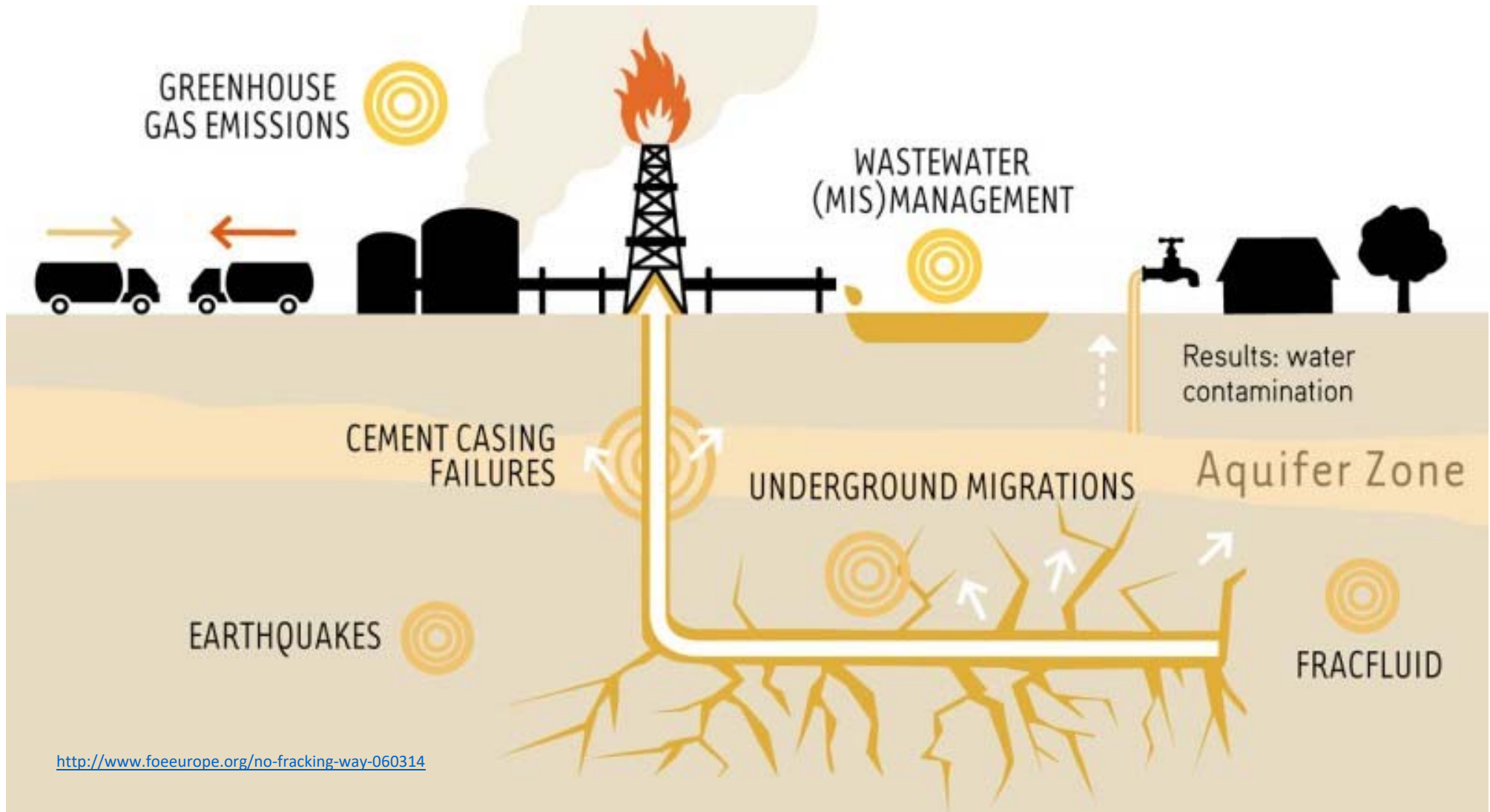
Greymouth Ohanga-A
wellsite, Taranaki

Photo by Fiona Clark, 26 Nov 2014



<https://www.croftsystems.net/oil-gas-blog/what-is-hydraulic-fracturing-fracking> (video by Marathon Oil)

Environmental Harm



Drill Rig “Big Ben” at Todd Taranaki Mangahewa-E Wellsite

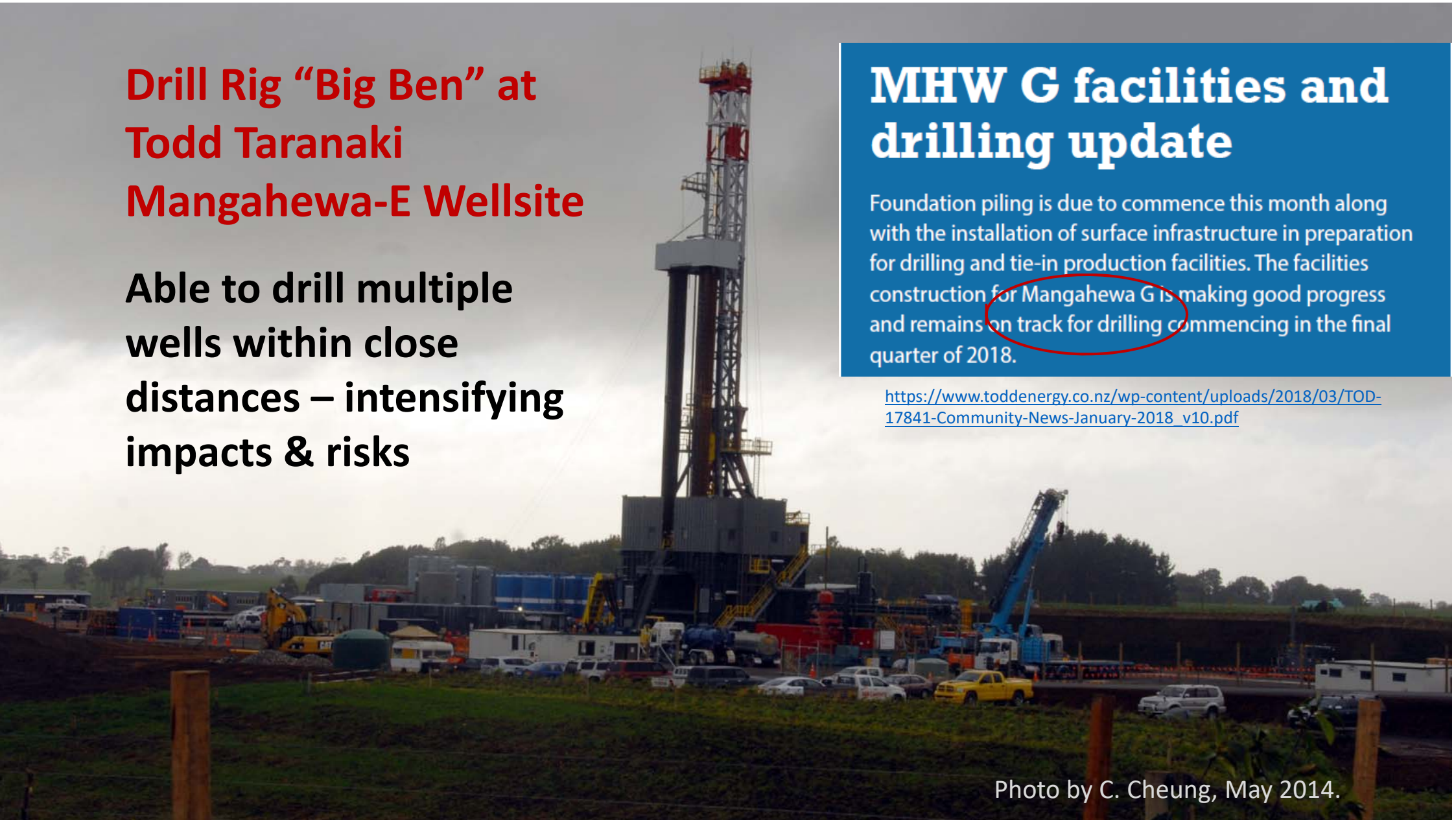
Able to drill multiple
wells within close
distances – intensifying
impacts & risks

MHW G facilities and drilling update

Foundation piling is due to commence this month along with the installation of surface infrastructure in preparation for drilling and tie-in production facilities. The facilities construction for Mangahewa G is making good progress and remains on track for drilling commencing in the final quarter of 2018.

https://www.toddenergy.co.nz/wp-content/uploads/2018/03/TOD-17841-Community-News-January-2018_v10.pdf

Photo by C. Cheung, May 2014.



Frack, frack and frack again

Date	Well	No. of Zones	Depth (m)	Frack fluid (m3)	Chemicals (%)	Proppant (tonnes)	Nitrogen (m3)	Returned fluid (m3)
23-26Nov 2014	Mangahewa-17	4	3676-4117	618	2.87	47	0	327
13-20Dec 2014	Mangahewa-18	6	3410-4085	1085	3.32	136	0	484
28Nov-7Dec 2014	Mangahewa-19	4	3571-4168	718	3.57	85	0	1945
21-23Nov 2014	Mangahewa-20	4	3637-4135	663	2.06	53	0	559
Jan-Feb 2016	Mangahewa-14ST1	9	3462-4637	5404	1.85	247	93697	5854
Feb-Apr 2016	Mangahewa-12ST2	13	3444-4750	6653	0.20	319	0	7090

<https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGhf/MR2015-ToddEnergyMangahewaEHF.pdf>

<https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGhf/MR2017-ToddEnergyMangahewaCHF.pdf>

Taranaki examples of well leaks

Reported in Sept 2009, two production wells at Austral Cheal-A: *“The discharge to the Urenui Formation was occurring due to **integrity issues** with casing patch seals within the wells.”* (TRC 1133945, 2013).

In October 2013, Tag Oil’s Cardiff-3 well at Cheal-C wellsite encountered a *“**well integrity issue**”*, as recorded on WorkSafe list of 61 *“petroleum dangerous occurrence notifications”* (8 July 2013 - 7 Feb 2014).

In May 2014, Tag Oil’s own news alert reported that at Cardiff-3 well, *“the fracture stimulation [fracking] was affected by a **poor cement bond** (Tag Oil, 2014) over the interval, or **skin damage** must exist in the near wellbore area, restricting flow.”*

In April 2015, Tikorangi residents were informed by Todd Energy that four of their Mangahewa-C wells were **damaged** and have become unstable with saline water intrusion. Two will be **plugged and redrilled** to different directions. A few of the Mangahewa-E wells appear to be also showing signs of **integrity issues**.

Call for Tender: Onshore Petroleum Wells Technical Assessment

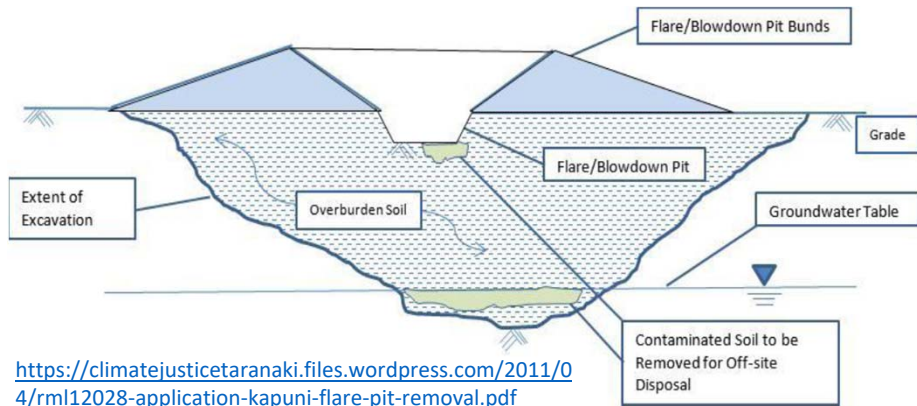
MBIE's recent review of more than **960** onshore wells drilled over the last 150 years found a number of wells to have ***“outstanding plugging and abandonment (P&A) commitments, i.e. these wells are not recorded as having been plugged and abandoned. These wells represent an **unknown risk to health and safety, and the environment**”***.

MBIE has been looking for a **suitably qualified technical service** provider to assist in determining and describing the technical integrity of these wells, and provide a methodology that **ranks the risk these wells** pose, which will be used to prioritise any activities to **address this risk**.

<https://www.gets.govt.nz/MBIE/ExternalTenderDetails.htm?id=18827350> (July 2017)

Taranaki examples of environmental contamination

- Soil & groundwater contamination at wellsites, 'landfarm', urea plant
- Stream bed contamination at 'wormfarm'



<https://climatejusticetaranaki.files.wordpress.com/2011/04/rml12028-application-kapuni-flare-pit-removal.pdf>

- <https://www.tagoil.com/news/tag-announces-fy2015-drilling-program-and-provides-operations-update/>
- <https://climatejusticetaranaki.files.wordpress.com/2011/04/stdc-information-report-re-consents-for-kapuni-contaminated-soil-2012-08-7.pdf>
- <https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGproduction/MR2016-ToddMckeeProductionStationPowerPlant.pdf>
- <https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGwaste/MR2014-BTWWellingtonLandfarm.pdf>
- <https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGwaste/MR2016-BTWWellingtonLandfarm.pdf>
- <https://trc.govt.nz/assets/Documents/Environment/Monitoring-Industry/MR2017-BallanceKapuni.pdf>
- <https://www.trc.govt.nz/assets/Documents/Environment/Monitoring-Industry/MR2017-RemediationNZ.pdf>



Figure 1 Aerial photograph showing the layout of the landfarming facilities on Brown Road, Waitara, and approximate regional location (inset)



Photo by Fiona Clark, 1/06/14



Where do companies take water for hydraulic fracturing (HF) operations at these well sites?

Todd Mangaheva-A

Permitted activity take and water trucked in from a municipal supply.

Mangaheva-D

Consented groundwater and surface water take.

Mangaheva-G

Yet to be decided.

Greymouth Kaimiro-A

Trucked from municipal supply.

Kowhai- A

Have not given effect to hydraulic fracture discharge permit so cannot provide the information.

Kowhai-C

Permitted take from pond onsite.

Kowhai-D

Permitted take from pond onsite.

Ngatoro-E

Permitted take and trucked in from municipal supply.

Ohanga-A

Trucked in from municipal supply.

Turangi-B

Trucked in from municipal supply.

Urenui-I

Permitted take and trucked in from municipal supply.

Origin Kauri-E

Trucked in from municipal supply.

STOS-Kapuni wellsites

Waimate West Water supply.

Tag Oil Cheal-C; Cardiff; Supple-jack; Sidewinder

All trucked in from municipal supplies.

Response from Taranaki Regional Council to OIA request, 2 May 2017

Water abstraction

From 2011-2012, Todd Taranaki exceeded its water abstraction limit to take from Mangaheva Stream for McKee production station on 9 occasions, *“although associated effects on stream health were unlikely. ... the Company demonstrated a good level of environmental performance and compliance..”* (TRC 1143821, 2013).

Health Impacts

In Darling Downs QLD, **hospital admissions** for acute circulatory conditions increased 133% & acute respiratory conditions increased 142% from 2007-2014.

Coal seam gas emissions increased substantially over the same period:

NO_x, PM₁₀, volatile organic compounds & formaldehyde.

McCarron, 2018

<http://www.tandfonline.com/doi/full/10.1080/00207233.2017.1413221>

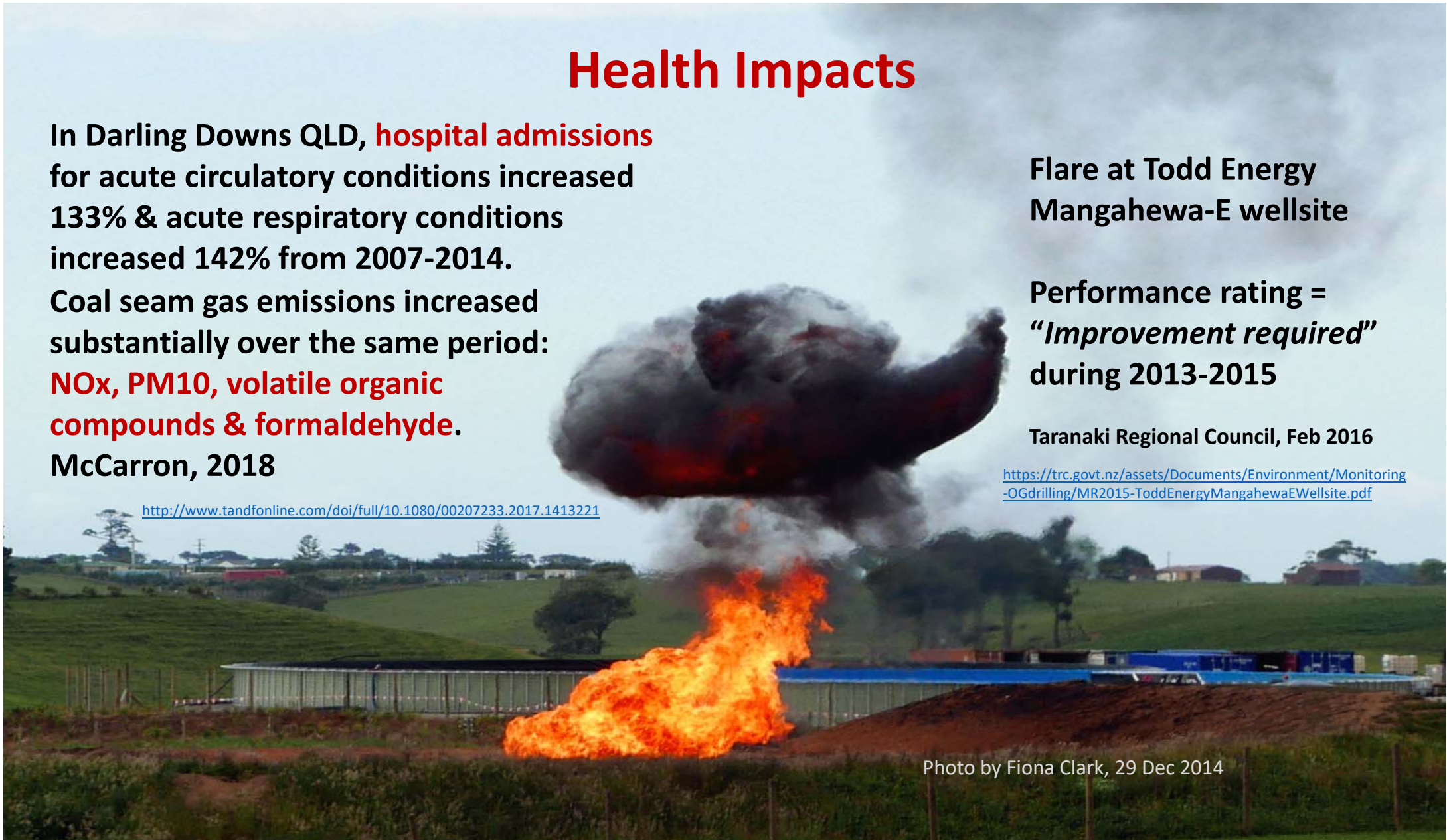
Flare at Todd Energy
Mangahewa-E wellsite

Performance rating =
“Improvement required”
during 2013-2015

Taranaki Regional Council, Feb 2016

<https://trc.govt.nz/assets/Documents/Environment/Monitoring-OGdrilling/MR2015-ToddEnergyMangahewaEWellsite.pdf>

Photo by Fiona Clark, 29 Dec 2014





**Compendium of Scientific, Medical, and Media Findings
Demonstrating Risks and Harms of Fracking
(Unconventional Gas and Oil Extraction)**

Fifth Edition

March 2018



Taranaki District Health Board advised South Taranaki District Council:
“Because of the potential **adverse health effects** and the **lack of knowledge** in the New Zealand setting we strongly recommend that a **“precautionary approach”** is applied to planning decisions related to oil and gas exploration.”
22 July 2016

https://www.southtaranaki.com/uploaded_files/District-Plan/160810/Taranaki%20District%20Health%20Board.pdf

<http://www.psr.org/resources/fracking-compendium.html>

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OENZ Site Emergency Response Manual
OEUP-NZ1000-MAN-SAF-001



<http://www.taranakienergywatchnz.org/>

Trial underway for activist group's appeal over council's drilling rules

TARA SHASKEY
Last updated 14:50, March 19 2018

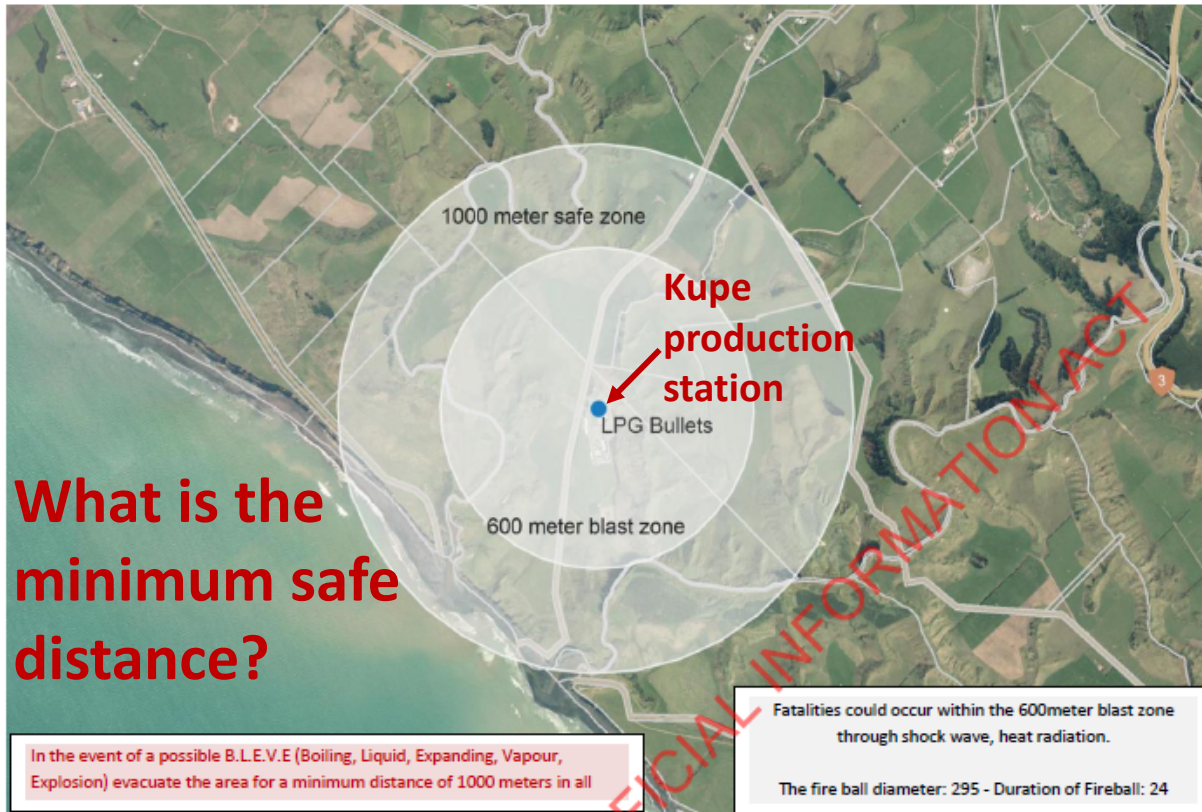


Sue O'Dowd/FAIRFAX NZ

South Taranaki District Council's proposed rules around seismic surveying are being appealed in the Environment Court. <https://www.stuff.co.nz/business/industries/102388952/trial-underway-for-activist-groups-appeal-over-councils-drilling-rules>



Health & Safety Impacts



Slide courtesy of Taranaki Energy Watch <http://www.taranakienergywatchnz.org>

Climate Change Impacts



Fugitive emissions captured by a FLIR camera in Texas

<https://www.youtube.com/watch?v=RAo3mh8CwMU&feature=youtu.be>



<https://www.youtube.com/user/earthworksaction/videos>

<https://vimeo.com/205496570> (Australia)

https://d3n8a8pro7vhmx.cloudfront.net/lockthegate/pages/3861/attachments/original/1495068484/FLIR_Report_FINAL_20170501_Small.pdf?1495068484

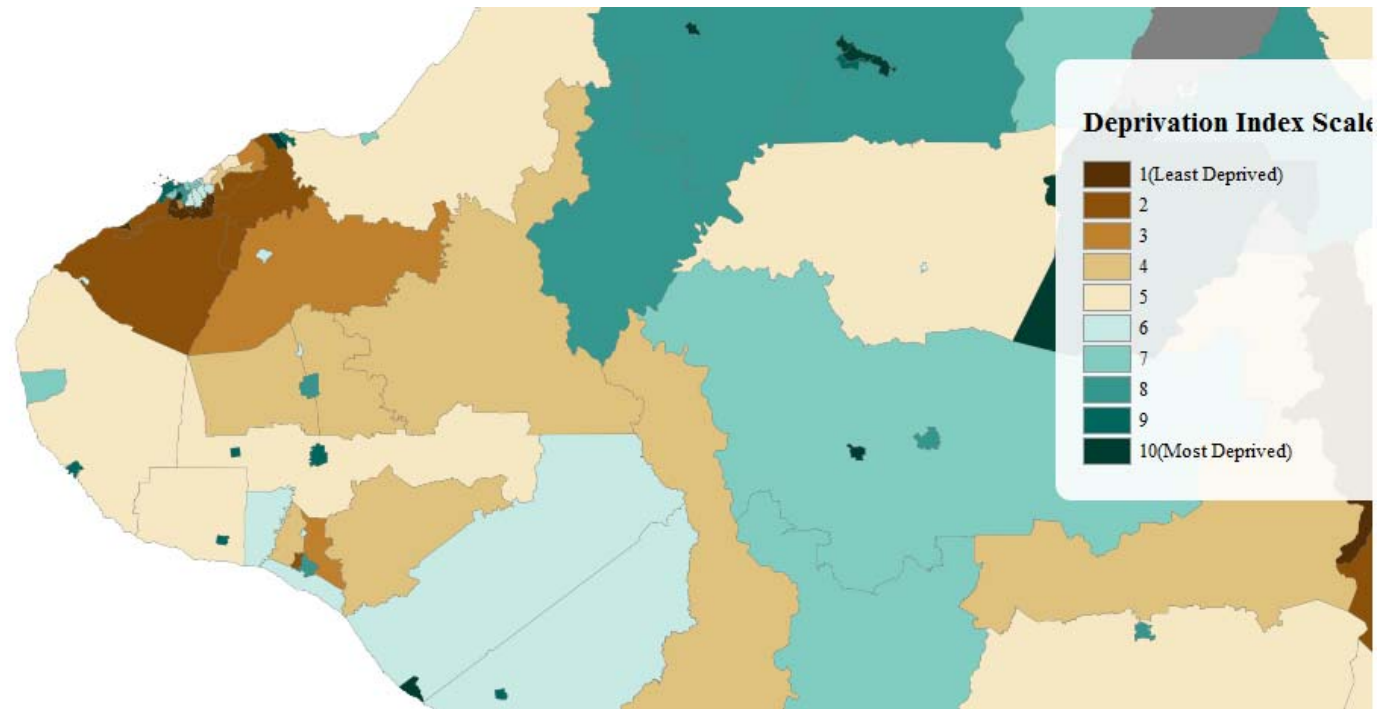
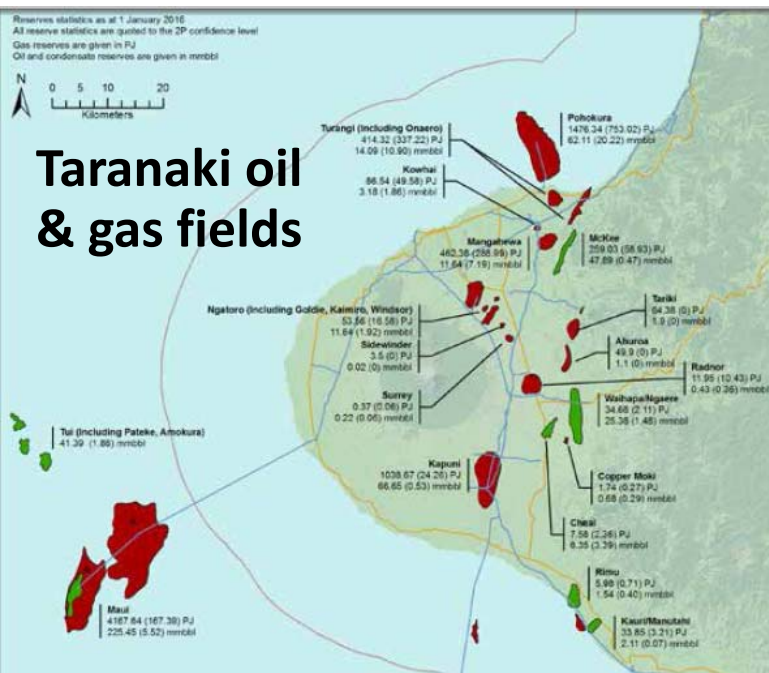


EARTHWORKS
earthworksaction.org

FLIR video by ITC certified Optical Gas Imaging Thermographer
Using FLIR GF 320 camera

Economic Impacts

Deprivation index for Taranaki and surrounds



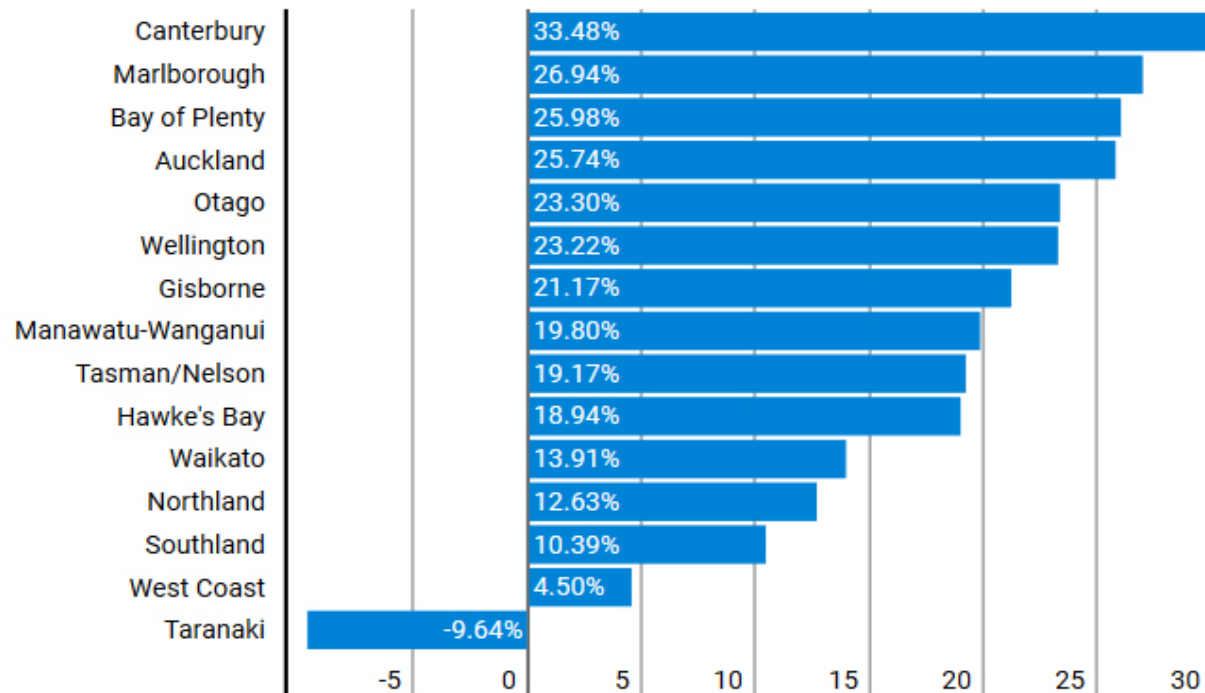
<http://www.mbie.govt.nz/info-services/sectors-industries/energy/energy-data-modelling/publications/energy-in-new-zealand>

Socioeconomic Deprivation Indexes: NZDep and NZiDep, Department of Public Health.
<http://www.otago.ac.nz/wellington/departments/publichealth/research/hirp/otago020194.html>
NZ Herald, 13 May 2014. Where are New Zealand's most deprived areas?
http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11254032

“Though the GDP per capita of \$71,297 remained ahead of the national average of \$54,178 ... *Oil and dairy* have long been the region's flotation device but the economic downturn signalled a warning call for an industry shake-up...”

<http://www.stuff.co.nz/taranaki-daily-news/news/91027256/gdp-hit-the-hardest-in-taranaki-but-region-still-leads-the-country>

Change in GDP per capita, 2009-2016



Source: Statistics NZ



<https://www.stats.govt.nz/infographics/new-zealands-regional-economies-2017>

More job losses at Taranaki engineering company ITL

DEENA COSTER
Last updated 12:43, May 29 2015

“...*New Zealand Energy Corporation* announced job losses for its Taranaki based staff and in March, Bell Block based oil and gas pipeline specialists *Energyworks* reviewed its work force in light of a decrease in scheduled work.... *Halliburton* and *Baker Hughes*, who both have a presence in Taranaki, have also felt the pinch and earlier in the year announced thousands of job cuts which affected employees world-wide. ”

<https://www.stuff.co.nz/taranaki-daily-news/68953932/more-job-losses-at-taranaki-engineering-company--itl>

Cost Cut & Job loss



Taranaki Engineering company lays off all its staff

LEIGHTON KEITH
Last updated 15:55, July 30 2017



"The closure comes as the result of a combination of persistently difficult market conditions, particularly the significant and sustained downturn in work from the energy sector," John Lecher

SIMON O'CONNOR/STUFF

Taranaki's Amtec Engineering at Bell Block closed and made all of its staff redundant last week.

<https://www.stuff.co.nz/taranaki-daily-news/news/95251374/taranaki-engineering-company-lays-off-all-its-staff>

Decommissioning Costs

The government expects to pay over **\$800 million** in the next 25 years to oil companies, as tax and royalty rebates (42-48 % of total cost), to decommission their aging offshore rigs and structures

<http://www.stuff.co.nz/taranaki-daily-news/news/90952440/Government-faces-multi-million-dollar-bill-to-decommission-oil-rigs>

Inland Revenue is considering introducing '**Refundable tax credit**' for decommissioning

<http://www.petroleumconference.nz/wp-content/uploads/2017/04/23-Hulbert-Community-22-March.pdf>

<http://taxpolicy.ird.govt.nz/publications/2017-ris-areiirm-bill/petroleum-mining-decommissioning>

Government faces multi-million dollar bill to decommission oil rigs

LEIGHTON KEITH

Last updated 09:19, March 29 2017





Liability Costs

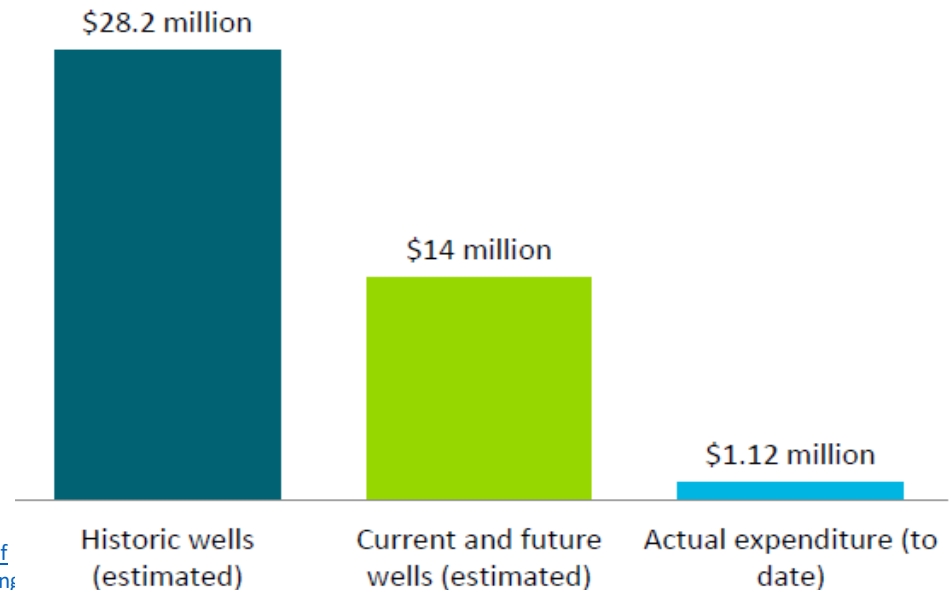
Managing third party risk exposure from onshore wells

Craig Barry & Tom Milton
Ministry of Business, Innovation and Employment
23 March 2017

- A well may pose a health & safety or environmental risk where the permit holder is no longer liable
- **Land owners** are exposed for the cost of plug & abandonment (P&A) and remediation if a well poses a health & safety or environmental risk
- Crown financially exposed as a last resort

<http://www.petroleumconference.nz/wp-content/uploads/2017/04/25-Milton-Community-23-March.pdf>
<http://www.mbie.govt.nz/info-services/sectors-industries/energy/current-reviews-consultations/managing-financial-risk-from-current-and-future-wells/discussion-document.pdf>

Size of third party risk exposure



How climate change could send your insurance costs soaring

LEITH HUFFADINE

Last updated 05:00, January 6 2018



“Council chief executive Tim Grafton says New Zealand can expect to face, on average, annual costs of \$1.6 billion... from natural disasters, based on data going back to 1900.”

<https://www.stuff.co.nz/environment/climate-news/98001955/how-climate-change-could-send-your-insurance-costs-soaring>

Climate Disruption Costs

New Zealand ill-prepared for rising cost of climate change

NewsTalk ZB Staff, National, Sunday, 17 December 2017, 7:08AM



<http://www.newstalkzb.co.nz/news/national/new-zealand-ill-prepared-for-rising-cost-of-climate-change/>

New Zealand to spend \$14 billion to meet Paris Agreement targets

<http://www.newshub.co.nz/home/politics/2017/05/new-zealand-to-spend-14-billion-to-meet-paris-agreement-targets.html>

22/05/2017 | Isobel Ewing

Economy Hub: The five biggest risks facing NZ this year

13 Feb, 2018 2:59pm

http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11993533

Natural catastrophe & extreme weather events have topped the list of perceived risks...

Climate change risk prompts Super Fund to sell shares in oil, gas firms

1:05 pm on 15 August 2017



Eric Frykberg, Transport, Energy & Resource Infrastructure Reporter
eric.frykberg@radionz.co.nz

Share this



The New Zealand Superannuation Fund has sold shares in some of the world's biggest companies to reduce exposure to firms emitting greenhouse gases.



<http://www.radionz.co.nz/news/national/337218/super-fund-sells-shares-to-cut-climate-change-exposure>

*“We think that climate change represents a **material risk**, one that is not being properly priced by the markets... This is clearly **not an ethical decision** at this stage, it is an **investment decision**”* Matt Whineray of NZ Super Fund

<http://www.noted.co.nz/money/investment/why-nz-super-fund-is-ditching-millions-worth-of-climate-damaging-investments/>

Divestments

Schlumberger To Exit Land, Marine Seismic Acquisition Business

Velda Addison Senior Editor, Digital News Group Hart Energy Friday, January 19, 2018 - 12:10pm



*“Schlumberger Ltd. (NYSE: **SLB**) has decided to exit the land and marine seismic acquisition business, which has been battered by the downturn and faces an **uncertain future**.”*

<https://www.epmag.com/schlumberger-exit-land-marine-seismic-acquisition-business-1679376#p=full>

ANZ chief economist
Cameron Bagrie said
nothing good can last
forever...

*"**Volatility** is the name of
the game... The idea you're
going to have one career for
life is a joke. Things are
moving at such an
exponential pace... What
we're seeing is **a massive
structural change**"*

<http://www.stuff.co.nz/business/industries/90611800/the-slow-demise-or-temporary-slump-of-new-zealands-oil-and-gas-industry> (24 March 2017)

The slow demise or temporary slump of New Zealand's oil and gas industry

BRITTANY BAKER

Last updated 16:01, March 24 2017



ANDY JACKSON/Fairfax NZ

Oil and gas are still the dominant player in the world's energy game but global warming is pushing fossil fuels into the socially and politically unacceptable zone.



About E tū Campaigns Democracy E tū members Events

<http://www.etu.nz/industry/energy-and-mining/>

*“The shift away from fossil fuels was real as renewable energy became cheaper and technology improved... We can’t continue to **put so many eggs in the oil and gas basket**. The transition from fossil fuels to renewables was happening and it was important to **prepare the region and the workforce** for it. The union supported a **just transition** where workers received fair redundancies, re-training and school leavers were encouraged to look for **sustainable jobs**,”*
Ross Henderson, E tū regional organiser

Taranaki Daily News, 20/03/18

<https://www.stuff.co.nz/business/102420256/taranaki-oil-sector-ready-to-move-away-from-fossil-fuel-exploration>

Ardern says Government 'actively considering' call to end oil exploration

HAMISH RUTHERFORD

Last updated 17:49, March 19 2018



<https://www.stuff.co.nz/business/102394885/ardern-says-government-actively-considering-call-to-end-oil-exploration>

<https://www.stuff.co.nz/opinion/102496476/government-should-work-with-us-not-against-us-taranaki-chamber-of-commerce-ceo-says>

<https://www.stuff.co.nz/national/politics/102498682/jacinda-ardern-i-lived-through-fast-economic-change-in-the-80s-we-wont-repeat-that-with-our-move-to-cleaner-energy-future>

Just Equitable Inclusive Transition



<https://blog.p2pfoundation.net/3-steps-to-building-just-transition-now-with-a-permanent-community-energy-cooperative/2017/05/09>

www.RallyForClimateJustice.nz
26, 27, 28 March 2018, Frank Kitts Park

