Alberta: Setting a New Path to Regain Our Competitive Advantage

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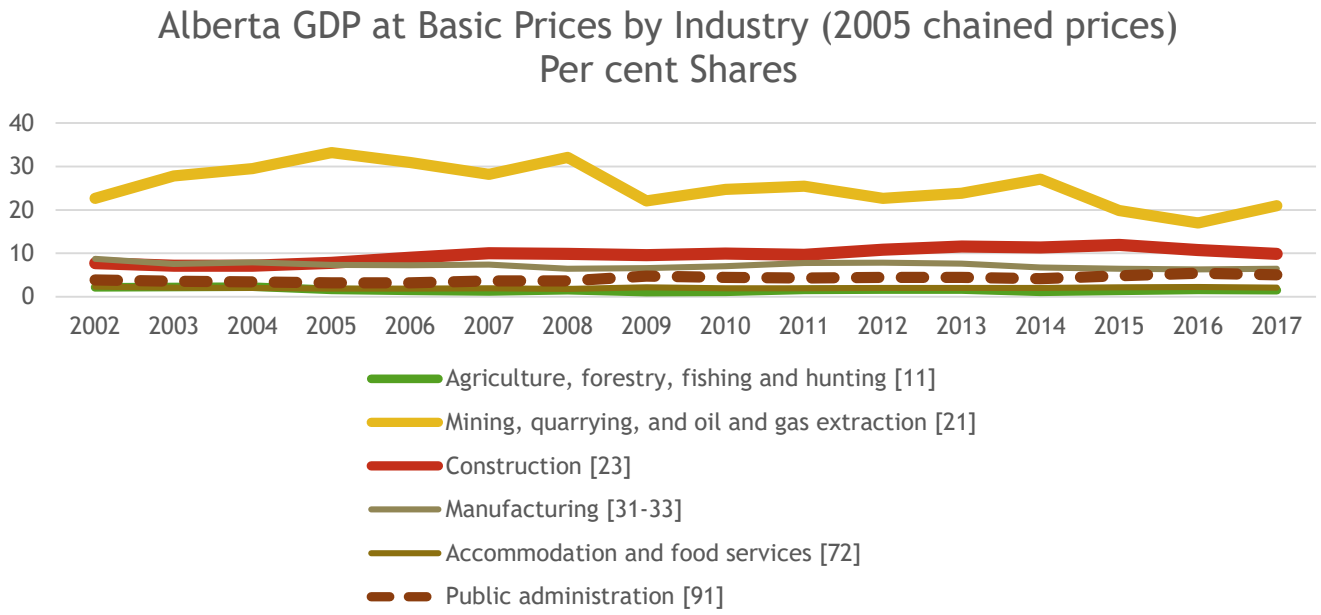
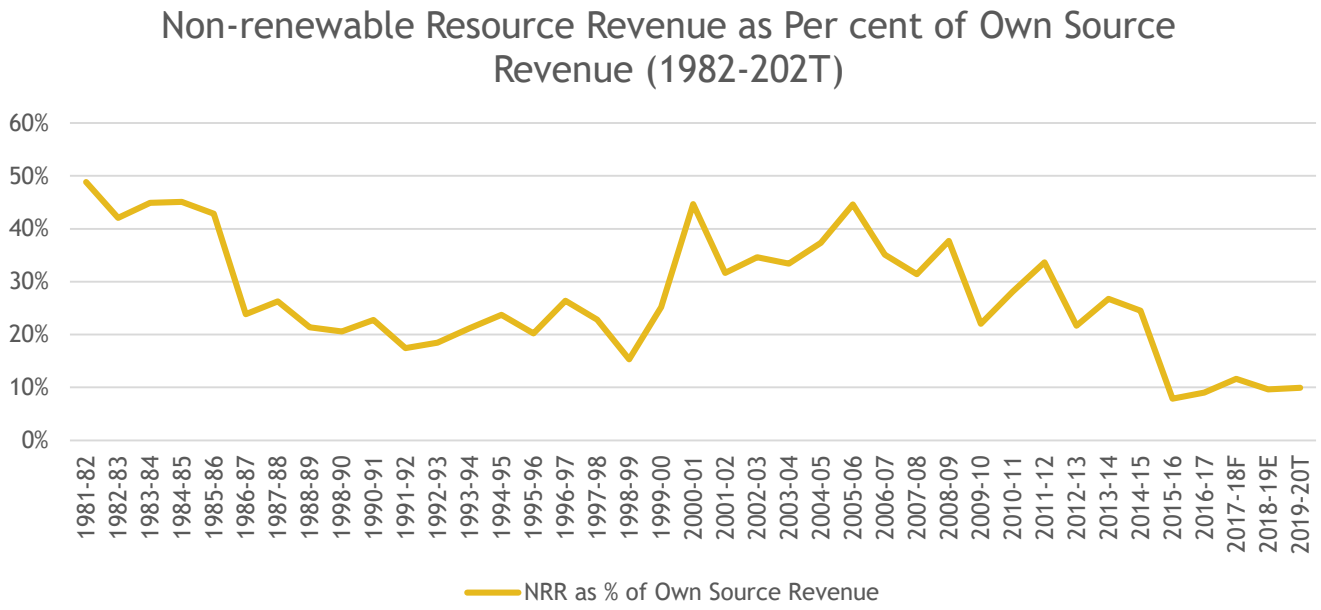
Bob Ascah, Ph.D.

Moderator

Energy drives Alberta's Economy- For How Long?



Non-renewable Resource Revenue as Per cent of Own Source Revenue



KOKO

Graham Thomson
Political Affairs Columnist
Edmonton Journal

Climate Leadership: Alberta's new competitive advantage

Alberta Government

Bob Savage, Assistant Deputy Minister
Alberta Climate Change Office

Where we are today

Alberta Government

Climate Leadership: Not New to Alberta

- **2003** Climate Change and Emissions Management Act passed
- **2004** Specified Gas Reporting Regulation
- **2007** Specified Gas Emitters Regulation
- **2008** Revised provincial Climate Change Strategy
- **2015** Amended Specified Gas Emitters Regulation
- **2015 Climate Leadership Plan**
- **2017** Carbon Levy
- **2018** Carbon Competitiveness Incentive Regulation

Alberta Government

The Climate Leadership Plan:

North America's most ambitious climate plan

Eliminates

coal-fired electricity by 2030

Sets 30%

renewables target by 2030

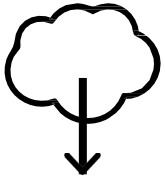
Already awarded **600 MW** at a cost of just **$37** per megawatt hour

Procuring up to **700 MW more** through two new rounds of the Renewable Electricity Program, including one that involves Indigenous partners

Alberta Government

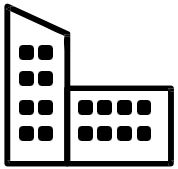
The Climate Leadership Plan:

North America's most ambitious climate plan

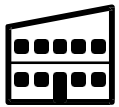


Methane emission reduction target of **45%** by **2025** for the oil and gas industry

Economy-wide carbon pricing



Industrial price that covers **13 industrial sectors** (and was created in one year)



A consumer-oriented price on carbon that reached **$30 per tonne in 2018**

Legislated 100 megatonne limit on Oil Sands Emissions

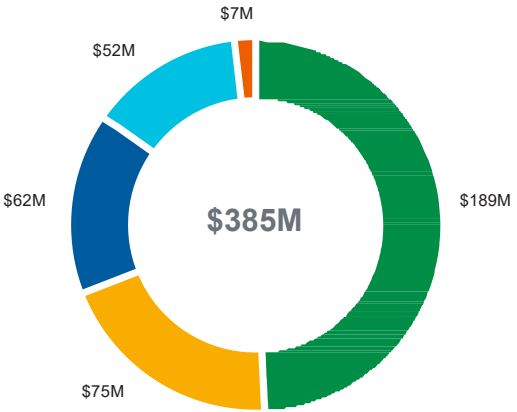
Created Energy Efficiency Alberta

$385 million in funding that created programs for solar installations, consumer product rebates and industrial efficiency

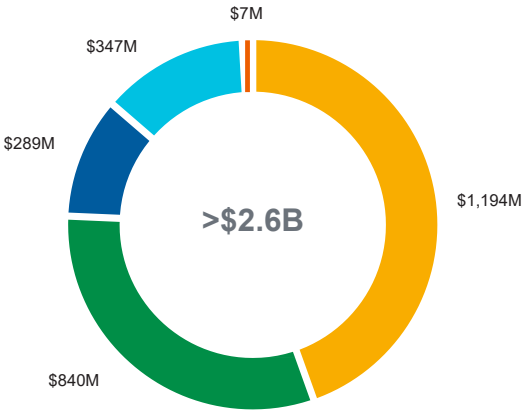
Alberta Government

Emissions Reductions Alberta's Investment Portfolio

ERA Investment by Strategic Area ($ Millions)



Total Project Value by Strategic Investment Area ($ Millions)



- Reduced GHG Footprint Of Fossil Fuel Supply (49 Projects)
- Low-Emitting Electricity Supply (12 Projects)
- Biological Resource Optimization (36 Projects)
- Industrial Process Efficiency (29 Projects)
- Adaptation (3 Projects)*

** In 2012, ERA provided funding for 3 adaptation projects in consultation with Alberta Environment and Water (now Alberta Environment and Parks).*

Alberta Government

Carbon Competitiveness Incentive Regulation:

Striking the perfect balance between economy and environment

Carbon Competitiveness

Transitions facilities for improved competitiveness in a carbon constrained world

Reducing Carbon Leakage

Provides protection for those facilities that are emissions intensive and trade exposed – therefore most at risk of carbon leakage

Managing Competitiveness Risks

Facility level cost containment provisions will provide relief to facilities at threat of closure due to the policy

Alberta Government

Major investments in green energy and clean technology

$1.4 BILLION

over the next several years

$440 million to Oil Sands Innovation Fund
$400 million to Green Loan guarantees
$240 million to Industrial Energy Efficiency
$225 million to support emissions-reducing technologies

Investing in new technologies through Emissions Reduction Alberta to reduce emissions per barrel in concert with industry

In May, announced $70 million in support to nine oil sands technologies through ERA's Oil Sands Innovation Challenge Funding will leverage a combined project value of more than **$720 million**

Alberta Government

Alberta's Oil Sands:
Preparing for a lower-carbon future

Key assets:

- Declining emissions intensity;
- Stringent environmental performance standards;
- Strong partnerships with local communities, and;
- A regulatory system that supports innovation and incentivizes environmental leadership

Hitting the sweet spot

As total production in Alberta grows, the emissions intensity of those barrels will fall

---

Technology can deliver a further

80 per cent reduction

in per-barrel GHG emissions: 2017 CERI study

On emissions from the oil sands,

perception lags reality

Alberta Government

The new normal in the oil sands

Imperial Oil's Kearl project, which began production in 2013 and ramped up in mid-2015 to 220,000 barrels per day, has the **same life-cycle GHG emissions** as other refined US crude grades

Suncor's $17 billion Fort Hills project, **which came online in 2017, has a similar emissions profile**

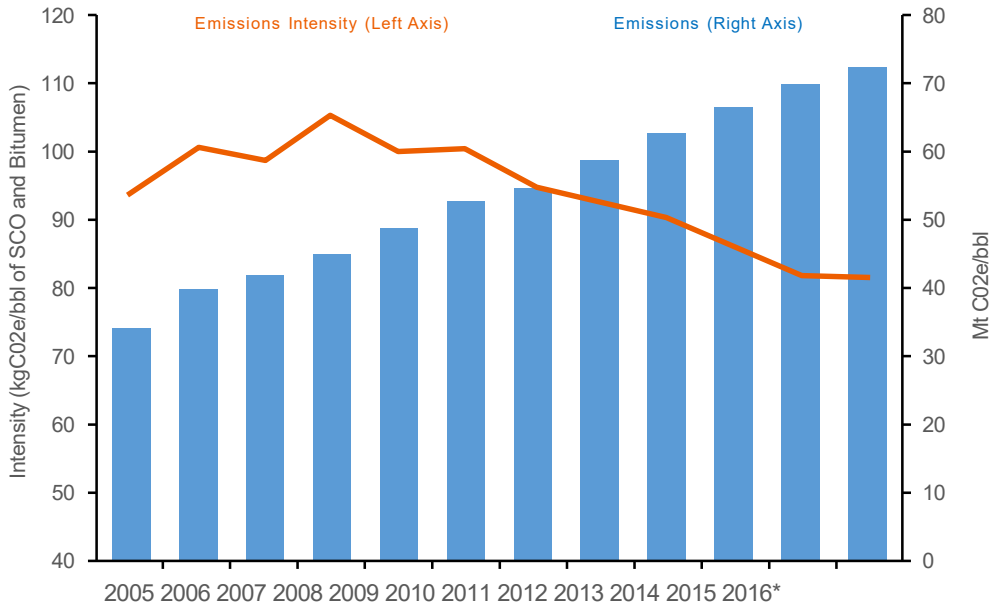
- Co-generation facilities and Paraffinic Froth Treatment technology drive superior emissions performance
- CCIR framework rewards owners of projects like Kearl – and ERA funding will help de-risk technologies like solvent in situ extraction and tailings-free processing
- 100 megatonne emissions cap for oil sands will drive further innovation and per-barrel emissions intensity reductions
- Suncor uses **50 per cent less** energy per barrel than it did a decade ago – and plans to drive that down another **30 per cent by 2030**

Alberta Government

Declining Emissions Intensity

The GHG intensity of Alberta oil sands crudes has decreased by over 25 per cent over the last decade

"There are some operations today that appear to be at or near the U.S. average already." – Kevin Birn, executive director, IHS Markit



Source: IHS Markit, Alberta Energy Regulator, Environment Canada's National Inventory Report 2018

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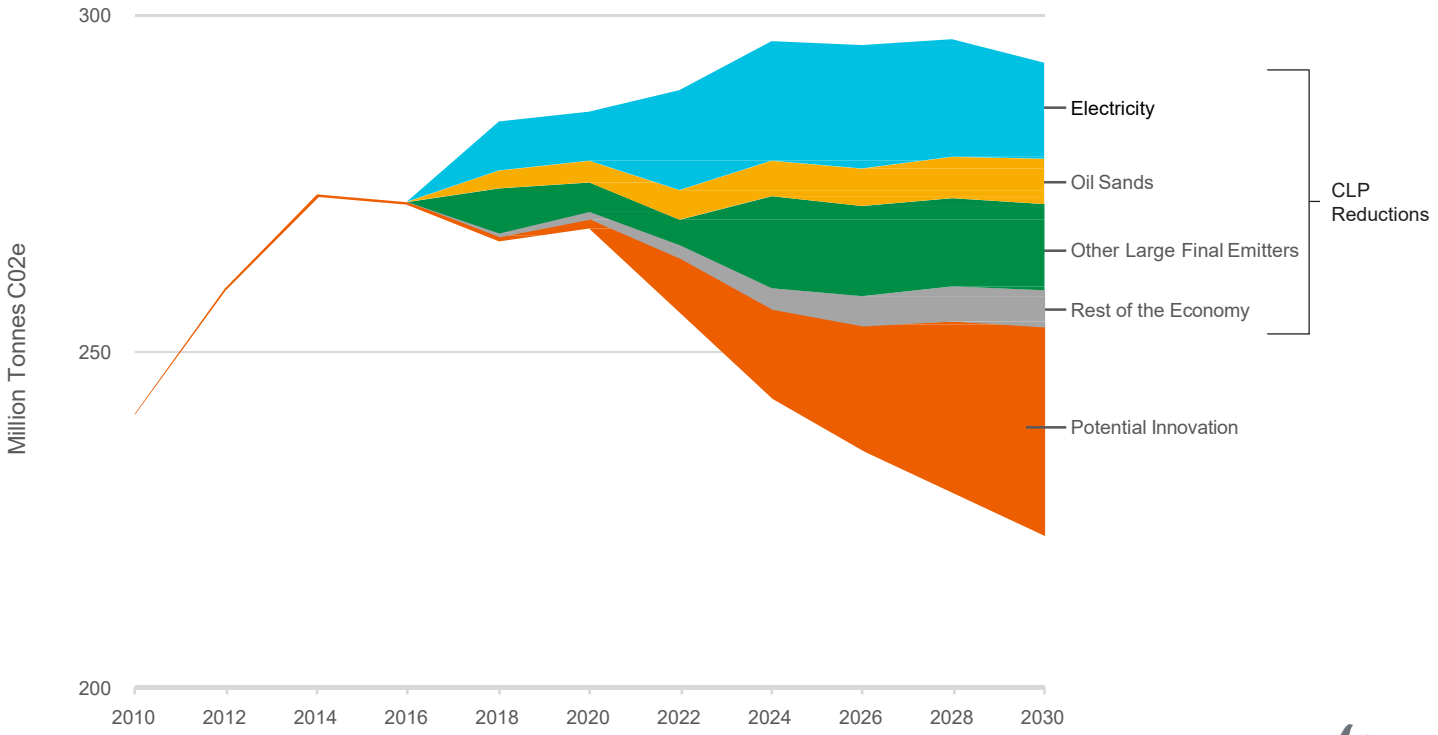
Alberta's GHG Emissions

Before and After CLP with Reductions by Sector



Alberta Government

Thank you

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Alberta Government

Resources and Directions for Green Transition in Alberta

Laurie Adkin, Ph.D., Professor of Political Science, University of Alberta

Presentation to Financial Management Institute, Edmonton, Alberta, October 4, 2018

GLOBAL CARBON BUDGET

Global CO_2eq emissions were estimated at 51.7 gigatonnes (Gt) in 2016,[a] and they will have to be reduced to no more than 34 Gt by 2030 and **14.2 Gt by 2050** if Earth is to have a greater than 50 per cent chance of staying below a 1.5 C temperature increase.[b] Essentially, we need to get to net-zero carbon economies by 2050, and the earlier the better.

[a] UNEP, *Emissions Gap Report 2017*, https://www.unenvironment.org/resources/emissions-gap-report-2017

[b] UNFCC Secretariat, *Aggregate effect of the intended nationally determined contributions: an update*. Synthesis report by the secretariat. FCCC/CP/2016/2. 2 May 2016, 53. http://unfccc.int/resource/docs/2016/cop22/eng/02.pdf.

year	Canada's actual or projected GHG emissions (Mt)	Canada's targeted GHG emissions level (Mt) according to gov't commitments (compared to IPCC)	Alberta's actual or projected GHGs (Mt)	Alberta's GHG levels (Mt) if IPCC targets adopted
1990	611		175	
2005	738			
2012		574 (Kyoto @ 6% below 1990)		164.5 (Kyoto)
2015			270	
2017	725		262-274	
2020	727	611 Copenhagen (17% below 2005 by 2020)	<290 (with 20 Mt increase from the oil sands)	
2030	??	517 (Paris 30% below 2005) 428 (IPCC @ 30% below 1990)	262-270	122 (IPCC @ 30% below 1990)
2050	??	148 (Paris 80% below 2005) 122 (EU/IPCC 80% below 1990)	??	35 (EU/IPCC @ 80% below 1990) 31 (DDPP 87% below 2010)

- 37 percent of Canada's GHG emissions currently come from Alberta, and half of those are from oil and gas production.[1]
- Alberta's GHG emissions *per capita* are 65.5 tonnes CO_2e (more than three times the national average).[2]
- GHG reductions from coal phase-out are predicted to be replaced by growth of emissions from the oil sands.[3]

[1] Government of Canada, Department of Environment and Climate Change, "Greenhouse gas emissions," https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html.

[2] National Energy Board, "Energy consumption and Greenhouse gas emissions," https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/ab-eng.html?=undefined&wbdisable=true.

[3] CPPA, "Extracted Carbon: Re-Examining Canada's Contribution to Climate Change through Fossil Fuel Exports," https://www.policyalternatives.ca/publications/reports/extracted-carbon.

If Alberta's emissions are in the range of 260-270 Mt in 2030 (the current climate plan target), and Canada's emissions total 524 Mt (the current federal target), Alberta's GHG emissions will amount to **50 per cent** of all of Canada's emissions.

How can we accelerate a green transition?

PROPOSALS:

1. Nationally agreed upon principles for allocating Canada's emissions reductions (targets for 2030, 2040, and 2050) by province and territory, and for sharing the financial burdens of these reductions.

(a) Federal "green economy" transfers to be tied to job creation in ecologically sustainable sectors like renewable energy and water infrastructure and installation, retrofitting for energy efficiency, high-efficiency products manufacturing, recycling and reuse industries, environmental remediation, sustainable agriculture, food processing, and planning capacity at municipal and other levels.

2. Alberta needs revenue to reduce its fiscal deficit and accelerate green transition and job creation

(i) stop subsidizing R&D in fossil-fuel-related technologies through the CCEMC/ERA, Alberta Innovates, the Ministry of Economic Development and Trade, and the Ministry of Energy; redirect that revenue to the green economy;

(ii) direct the revenue from the carbon tax on fuels and from a higher levy on large emitters to investment in the rapid build-out of renewables and public transportation;

(iii) consider public ownership/equity in the renewables and transportation sectors to finance (debt on) the upfront costs;

(iv) raise revenue through a more progressive income tax schedule, and, if necessary, a sales tax with a redistributive component, to finance public services.

(v) use ATB Financial to provide loans for Alberta's green transition projects, including expanded renewable energy capacity and energy efficiency programs (Ascah and Anielski 2018).

3.

A plan to ensure that the abandoned oil and gas wells, oil sands sites, pipelines, and processing sites will be removed and remediated at minimal cost to Albertan and Canadian citizens. (These costs are now estimated to be well over $260 billion—an amount that exceeds all the government revenue from non-renewable resources since 1970.)

4.

Support for federal regulation of environmental product standards (e.g., fuel efficiency, energy use), with financial penalties for products that fail to meet these standards.

Support a stringent emissions elimination schedule for **methane**.

(Carbon pricing alone is not going to get us where we need to go; complementary approaches are needed.)

5.

A more ambitious target for the share of renewable energies in the provincial energy system by 2030 and set targets for subsequent dates.

6.

A new sustainable development mandate for the “innovation system.” The priority areas should be: sustainable agriculture and cities; water management; renewable energy systems; energy conservation; social planning capacity, and; institutional reform/citizenship.

7.

Decolonization.

The federal and provincial governments need to stop delegating their constitutional duties to corporations and start respecting the UNDRIP convention.

8.

Policy Coherence.

Every policy decision in every ministry should be subject to ecological and social equity criteria.

9.

- Investment in public education about climate change and pathways to a better future.

- *Involvement* of citizens in planning the transition.

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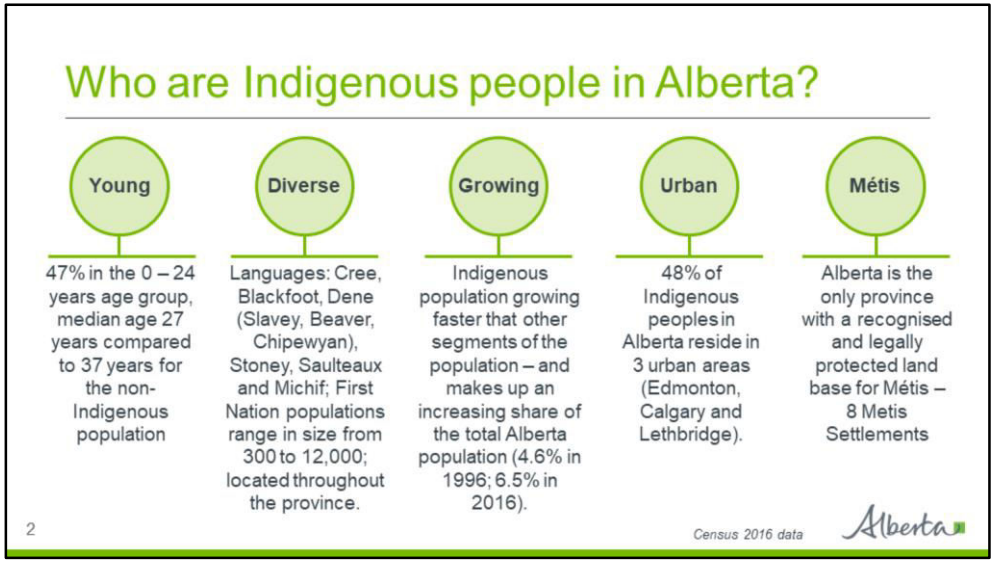
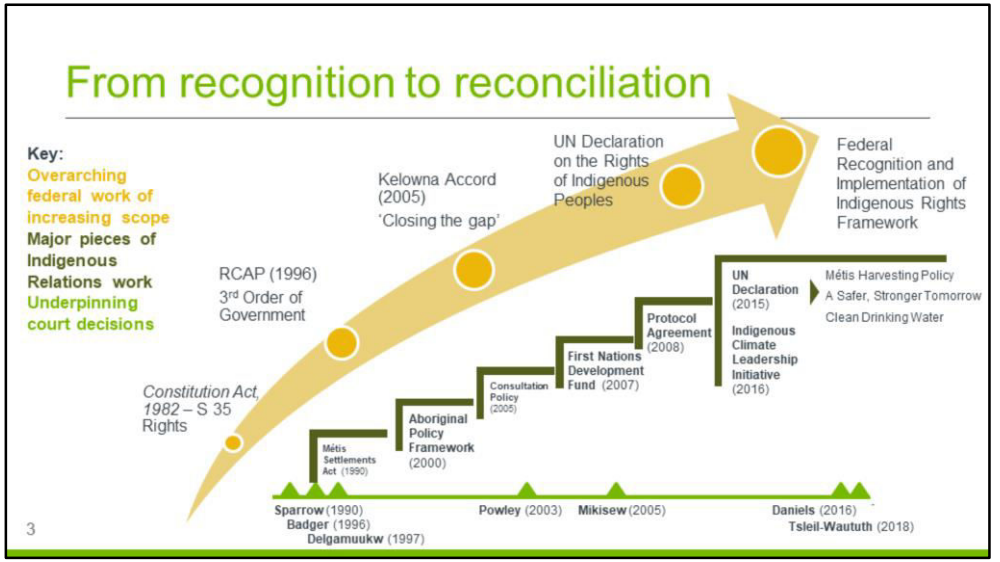
Acknowledge the Treaty area and traditional lands of the Metis

Thank you for being here today and inviting me to present. As part of Alberta's sustainable economic future, I am here today to share what the Government of Alberta is doing toward reconciliation with Alberta's Indigenous Peoples, and how they are increasingly participating in AB's economy.



- Indigenous Peoples 6.5% of Alberta's population – just over half – 55% - First Nations and 44% Metis (1%) Inuit. (Reminder these are peoples – multiple First Nations, different Metis Nations)
- Population growing quickly – in a growing Alberta population – in 20 years from 4.6% to 6.5% of population
- Increasingly urban – 1/3 of FNs live on reserve. Approximately 80% of Indigenous peoples live outside reserve/community
- Significant socio-economic gaps especially on reserve, but also Metis settlements, and off reserve populations – lifespan, employment, education, income
- Not just another population – First Nations and Metis have rights – collective rights – as peoples, or Nations, or government – First Nations – Treaty Rights; Metis – Aboriginal Rights
- Alberta is the only province with a recognised and legally protected land base for Métis – 8 Metis Settlements. Created through Métis Betterment Act 1938, and legally transferred to Métis people, with greater self-governance of Settlements, in 1990.



- Alberta has a long history of working with Indigenous peoples – particularly Métis. I can only go into a short history today, but we've included some further information on the thumb drive we've provided to you if you're interested.
- The arrow shows a number of significant (federal or national) political events following from the Constitution Act. The 1996 Royal Commission on Aboriginal Peoples (RCAP) – defined a vision of a 3rd order of Indigenous governments with financial resources and capacity to deliver services equivalent to what is available to non-Indigenous communities. That vision sat for about 20 years – but now drives federal initiatives
- The 2005 Kelowna Accord – represented a concerted effort among federal and provincial governments, Indigenous organizations and governments to close social and economic gaps as the first step toward greater self-determination
- More recently the UN Declaration – as raised expectation of self-determination, inclusion in decision-making – and authority over traditional lands – including the concept of Indigenous Free Prior and Informed consent over resource development
- Federal government is picking up these threads in its current initiative – intended to convey self-government and to address title, resource management and resource revenue sharing
- The bottom shows number of legal cases that have defined constitutional duties – largely around the duty to consult related to Treaty and unextinguished Aboriginal Rights

- The middle shows a number of major development within Alberta – decisions on policy and programs that result in today's department
- The original focus was on Metis – Metis settlements – we are the only province in Canada with land-based Metis – and our long term arrangements provide infrastructure and governance funding
- In the 2000's – in response to legal and political development – we had greater focus on First Nations – on economic inclusion and developing policy to fulfill the legal duty to consult – to share gaining revenue
- Most recently – after accepting the principles of the UN Declaration – initiatives such as drinking water, climate leadership

- The overarching goal is reconciliation – it is how we describe the renewed relationships with Indigenous Peoples. This is driven by these four aspects.
- Reconciliation has two sides: Everyone has a role to play; We are all Treaty people.

Our main goals/ results areas, broadly, are:

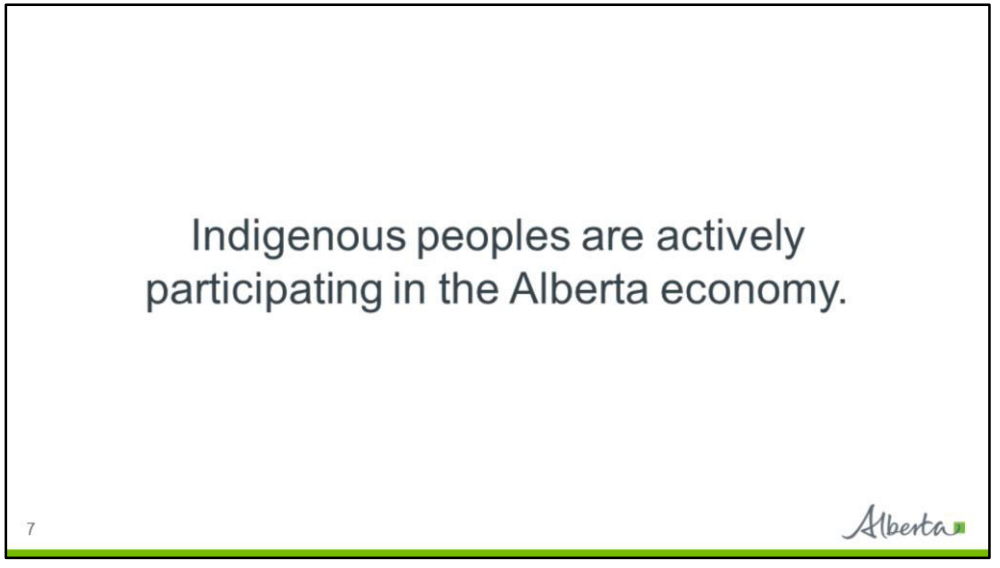
1. Enhancing social and economic outcomes – enabling economic participation, supporting child services, educations and other social programs to provide equivalent services in community to what is available to other Albertan's

    Here we deliver some services – economic development programs, labour programs – and others are delivered by other ministries. This reflect that the core expertise for education, child welfare – rests with the departments who do that for all Albertan's

2. Facilitating resource development while respecting rights and maintaining the Honour of the Crown – we are part of ensuring there is a competitive, well-functioning regulatory system that enables responsible resource development. We work closely with AER, Energy, Environment to ensure the legal duty to consult is adequately fulfilled – and to include Indigenous peoples in the resource and environmental management system

- At the heart of reconciliation is a shift in communication and engagement with Indigenous communities.

- The province focuses on establishing long-term frameworks and Protocol Agreements with Indigenous communities to undertake meaningful discussion, information sharing, and the exploration of issues of mutual concern. For instance, Alberta signed a Protocol Agreement with Treaty 8 First Nations in 2016, and a ten-year framework agreement with the Métis Nation of Alberta in 2017 to enable this work.



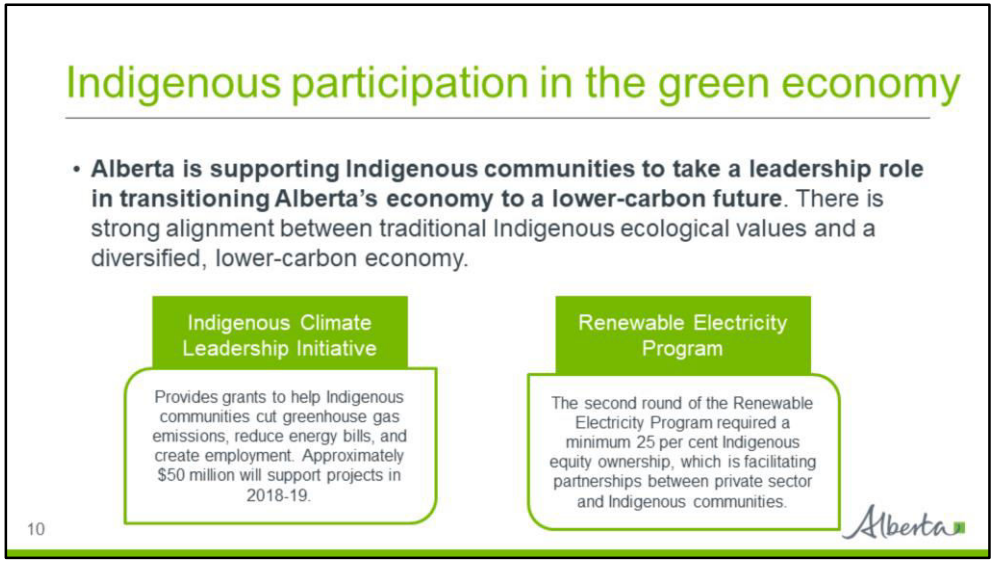
Now I would like to talk about how Indigenous Peoples are participating in the Alberta economy. Indigenous communities, organizations, and people are active players in AB's economy in many ways.

- Alberta enables and stimulates Indigenous participation in the economy by investing in communities' social and economic outcomes.
- For example, since 2015 the Aboriginal Business Investment Fund (ABIF) has distributed grants totaling nearly $20 million, with around half of this going to Indigenous communities in the oil sands area.
- In 2017-18, these grants funded diverse opportunities, including relocating and expanding Goodfish Lake Business Corporation's laundry plant to Lac La Biche, and constructing a grocery store at Athabasca Chipewyan First Nation.
- By offering investment into eligible Indigenous community-owned businesses, the province kick-starts economic participation and contributes to improved social and economic outcomes for Indigenous communities.
- The First Nation Development Fund is raised through the Indigenous owned casino operations in Alberta. There is a formula that ensures a portion of the revenue is shared among all First Nations in the province.

- Indigenous groups also collaborate with the private sector to receive benefits from, and participate in, development. These benefits include jobs, investment, and contracts.
- There are significant Indigenous-owned and operated companies working in the oil sands area. For instance, in 2017, Fort McKay First Nation and Mikisew Cree First Nation partnered with Suncor to buy a 49 per cent interest in Suncor's East Tank Farm Development for $503 million. The deal will help the First Nations make improvements to community infrastructure.
- First Nations and Metis Settlements also participate in Impact and Benefit Agreements with industry partners. These pivotal arrangements between industry and Indigenous communities provide opportunities and contracts to supply goods and services, employment, and social and economic investment by companies in Indigenous communities.
- IBAs bring significant investment to communities. Since 1999, Suncor has spent nearly $2.5 billion on contracts with Indigenous companies, while in 2016, Cenovus Energy Inc. spent 19 per cent of its capital budget with Indigenous partners.

- Over the last 20 years, Alberta has intentionally developed an environment that ensures the duty to consult, supports economic and social development in the communities, and continues to design effective and competitive processes that respect Indigenous rights and include Indigenous perspectives.

- This was recently reinforced by First Nations and Métis in Alberta's main oil sands region who have confirmed their collective interest in investing in the Trans Mountain Pipeline project. This support underlines the fact that Indigenous peoples and companies in Alberta are continuing to form long-lasting partnerships and develop proven records of successful business partnerships. We're proud of the Indigenous capacity and acumen that is constantly being displayed in the sector.



- Alberta is supporting Indigenous communities to take a leadership role in transitioning Alberta's economy to a lower-carbon future. There is strong alignment between traditional Indigenous ecological values and a diversified, lower-carbon economy.

- The province is providing opportunities for Indigenous communities to invest in and benefit from the emerging renewable electricity market.
- Funded through the Carbon Levy, the Indigenous Climate Leadership Initiative provides grants to help Indigenous communities cut greenhouse gas emissions, reduce energy bills, and create employment.
- This funding is enabling Indigenous communities like Cold Lake and Louis Bull First Nations to enter into the renewable energy sector by installing solar panels on public buildings.
- In 2017-18, this initiative distributed $35 million to 125 projects in 38 communities. Approximately $50 million will support projects in 2018-19.

- Alberta's Renewable Electricity Program aims for 30 per cent of Alberta's electricity to be generated from renewable sources such as wind, hydro, and solar by 2030.
- The second round of the Renewable Electricity Program required a minimum 25 per cent Indigenous equity ownership component, which facilitates partnerships between private sector and Indigenous communities and will result in 300MW of renewable electricity being added to Alberta's electricity needs.
- There is also work underway to increase Indigenous participation in utility scale generation in Albert in future.

Questions?

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Alberta

Alberta: Setting a New Path to Regain Our Competitive Advantage

Repositioning & Restructuring: Challenging & Incremental. Effective?

by

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for

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My perspective:

Reposition & Restructure
that is, DIVERSIFICATION

Why diversification?
To stabilize the economy

Outline

Some Background

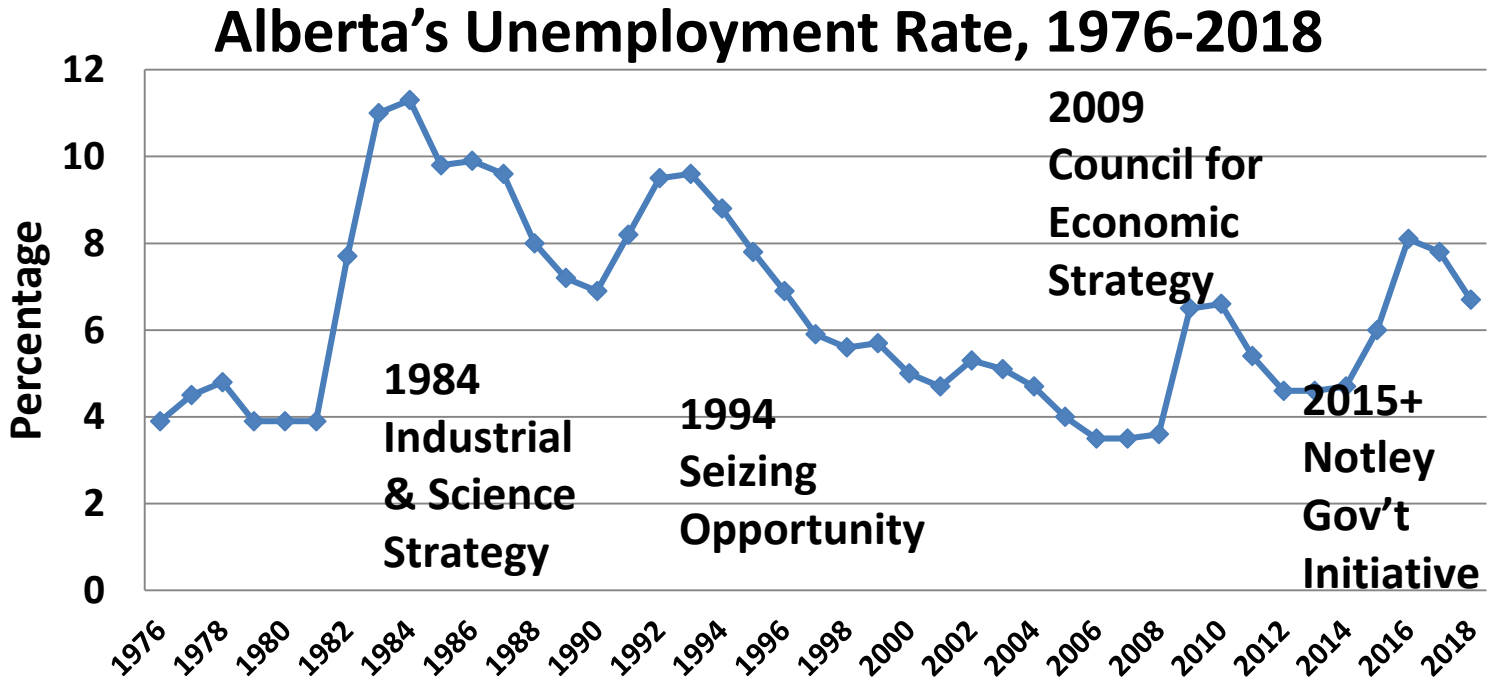
Current Policies

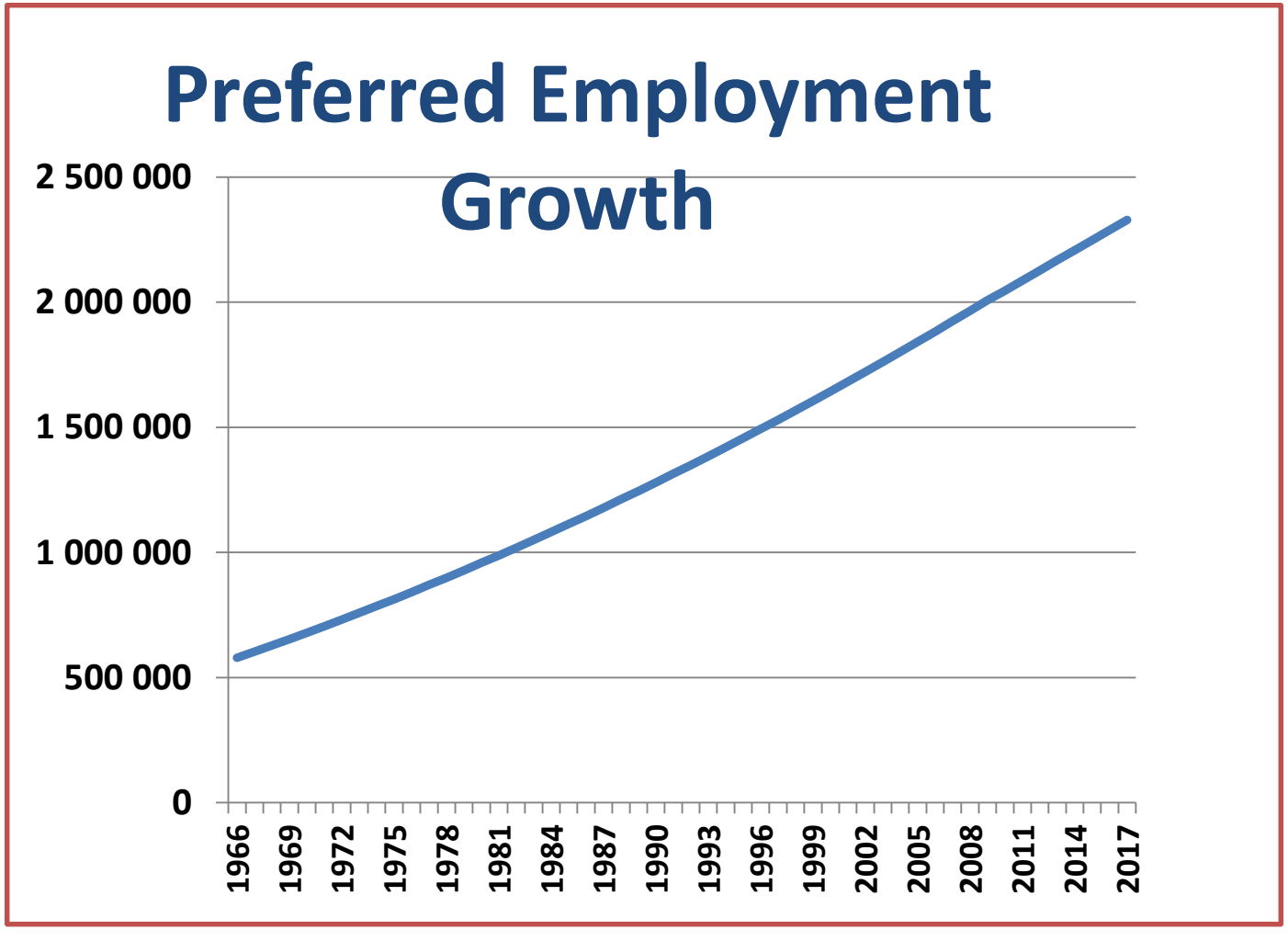
Effectiveness

Still an Alberta Advantage?

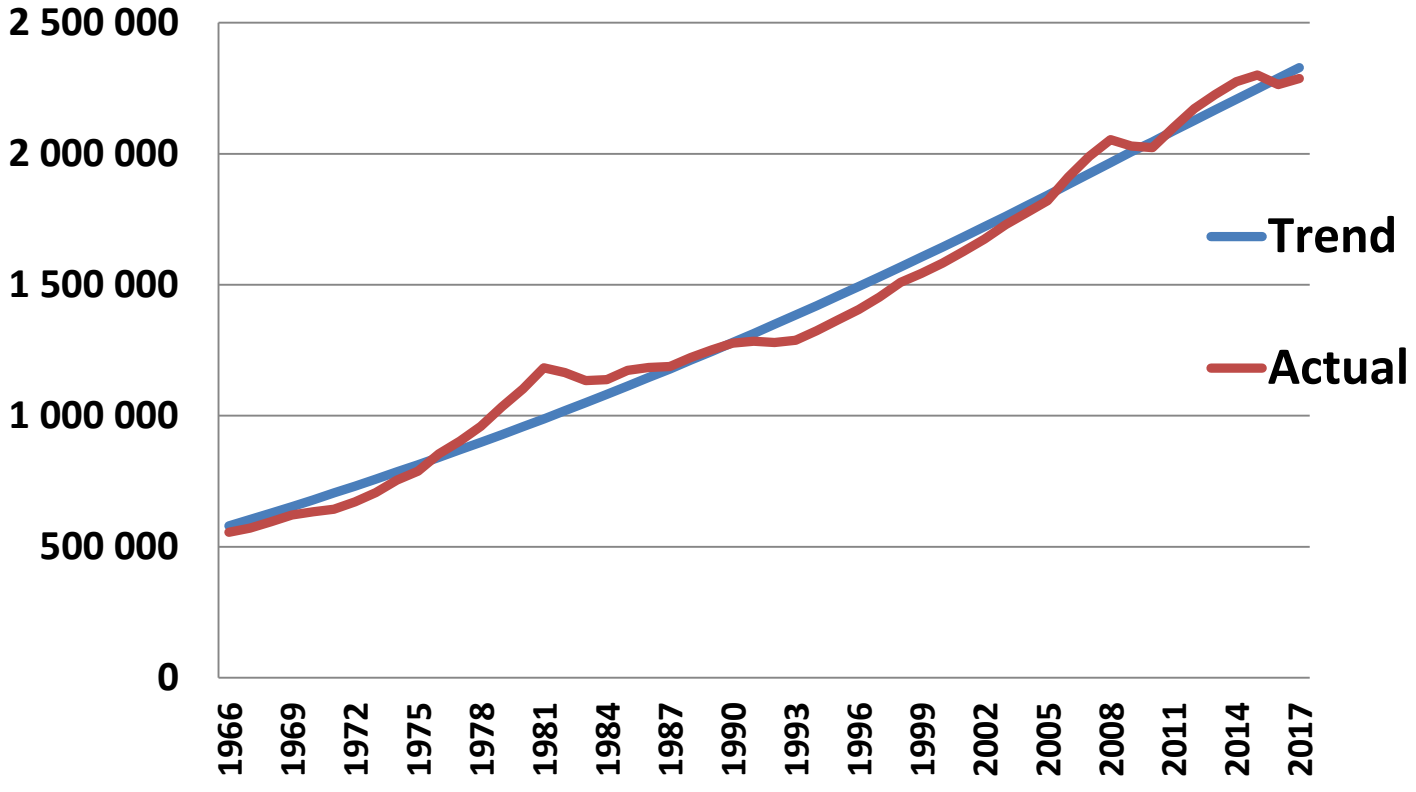
Background

Diversification: a Re-occurring Theme (especially if unemployment is high)

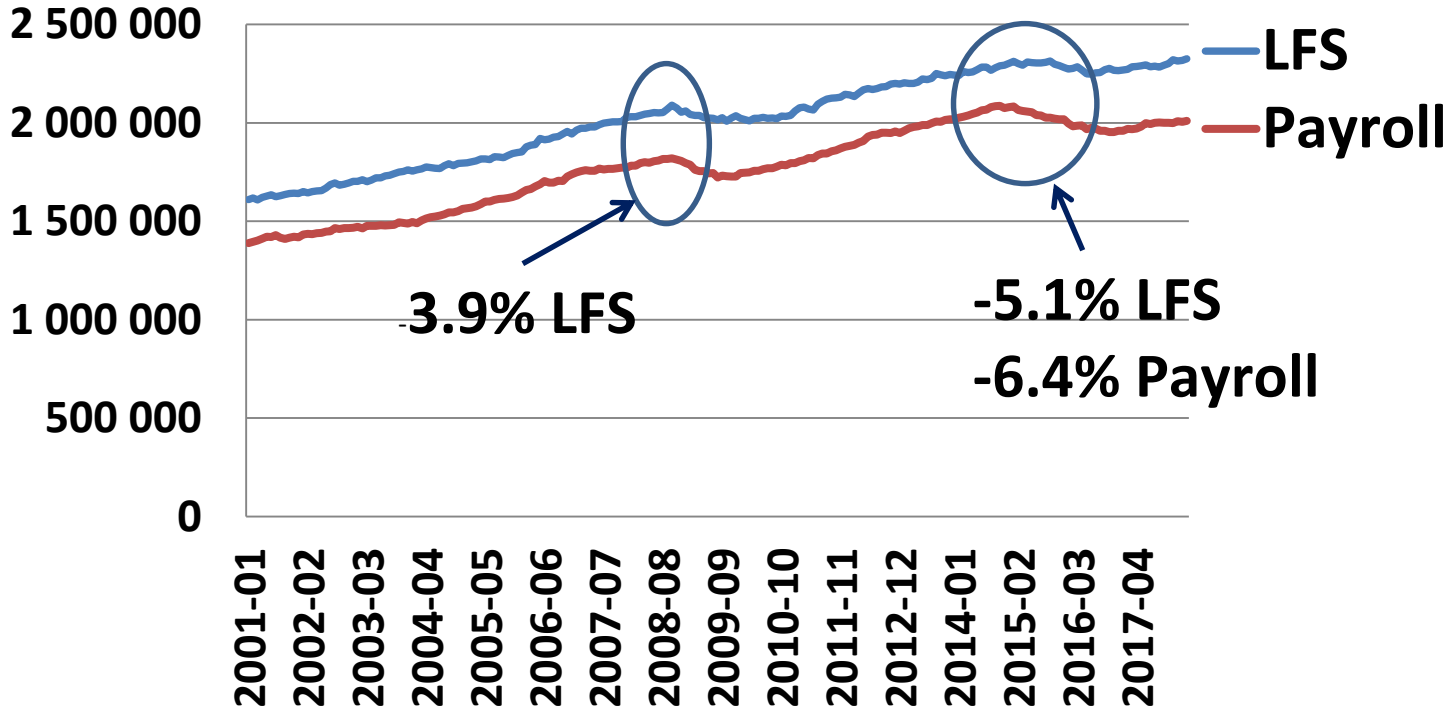



Preferred Employment Growth
2 500 000
2 000 000
1 500 000
1 000 000
500 000
0
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
2014
2017

Preferred vs. Actual Employment

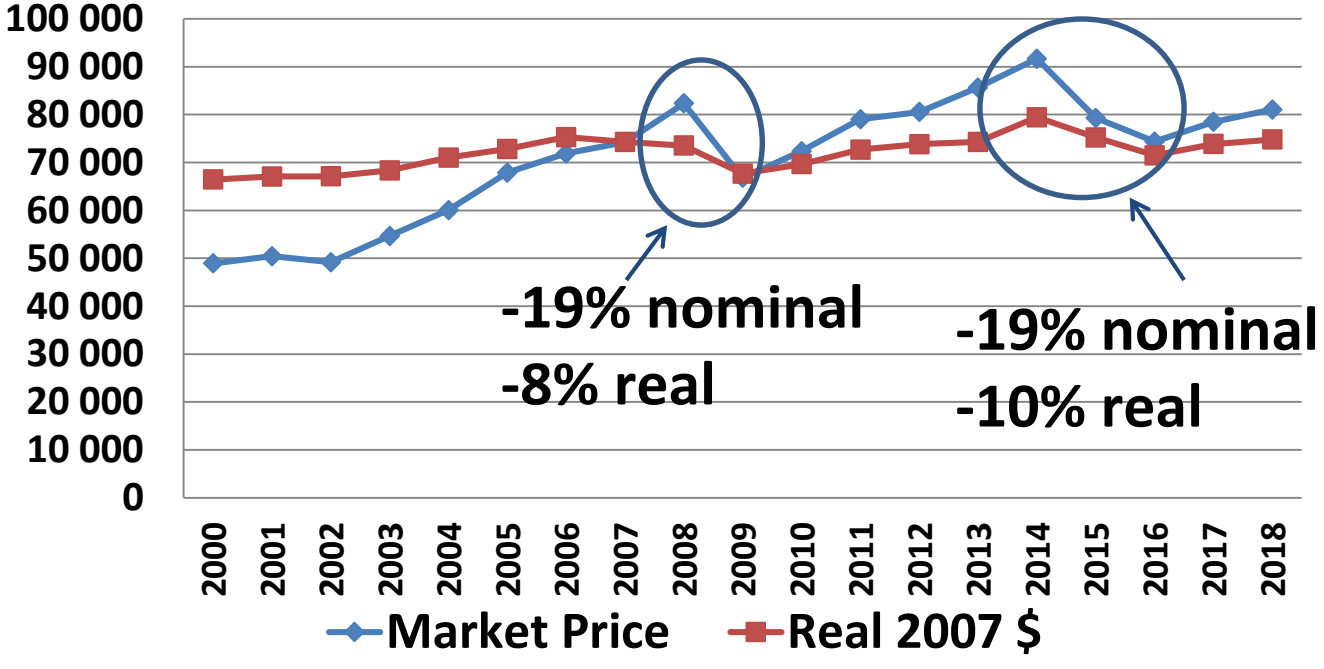


Alberta Employment:

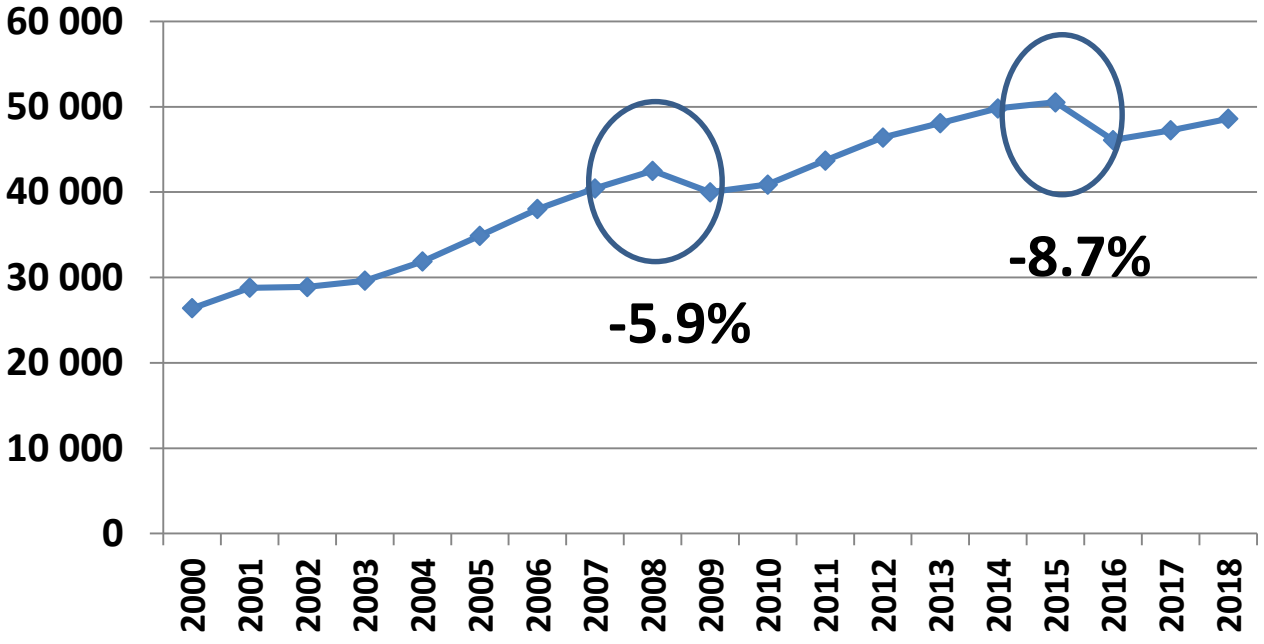


Other Measures

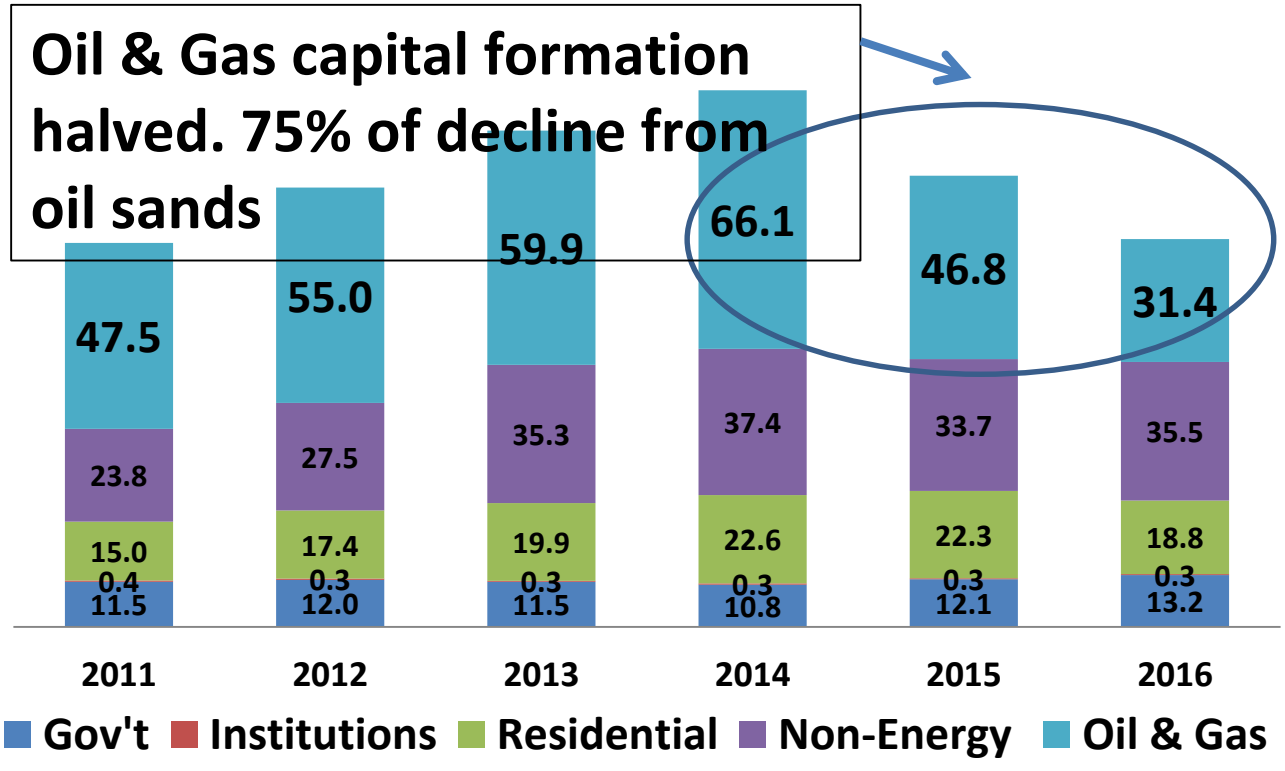
Nominal vs Real (2007$) GDP Per



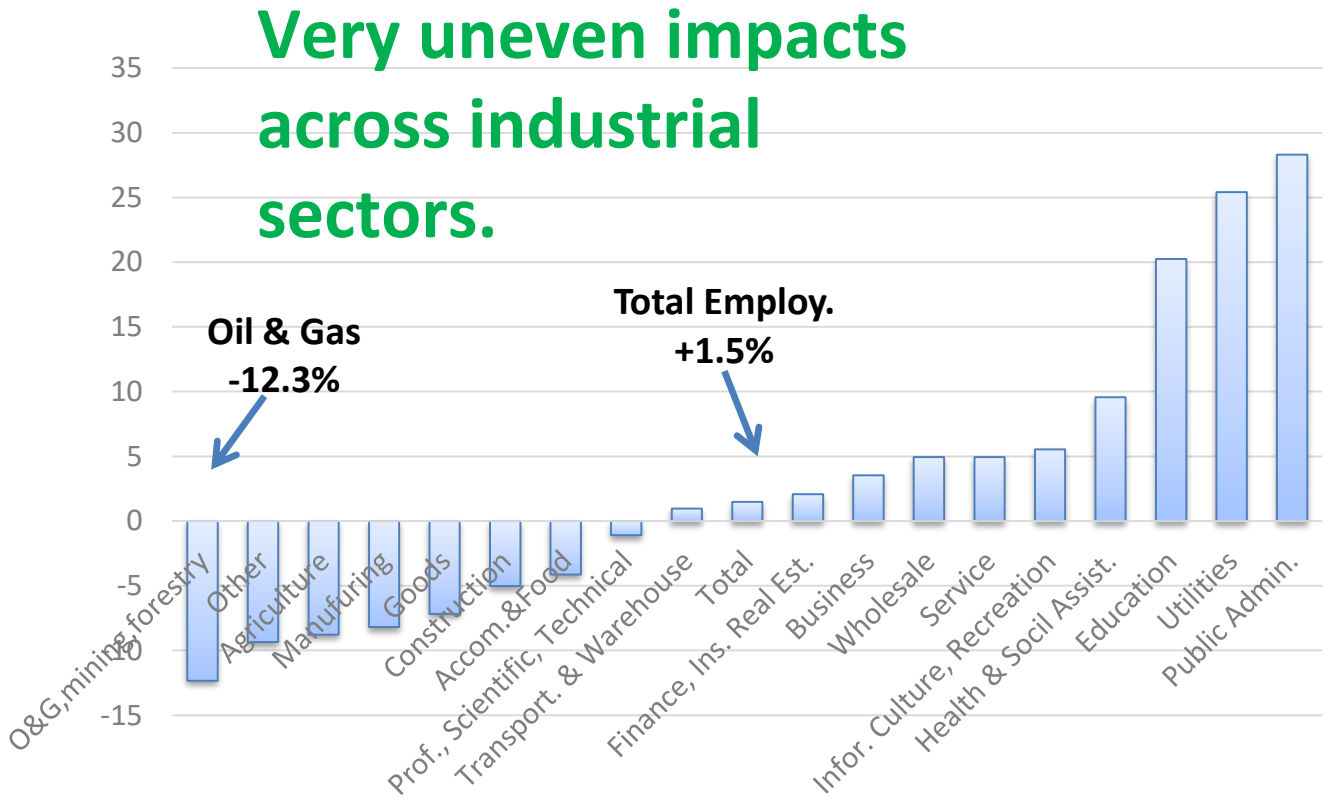
Alberta Primary Household

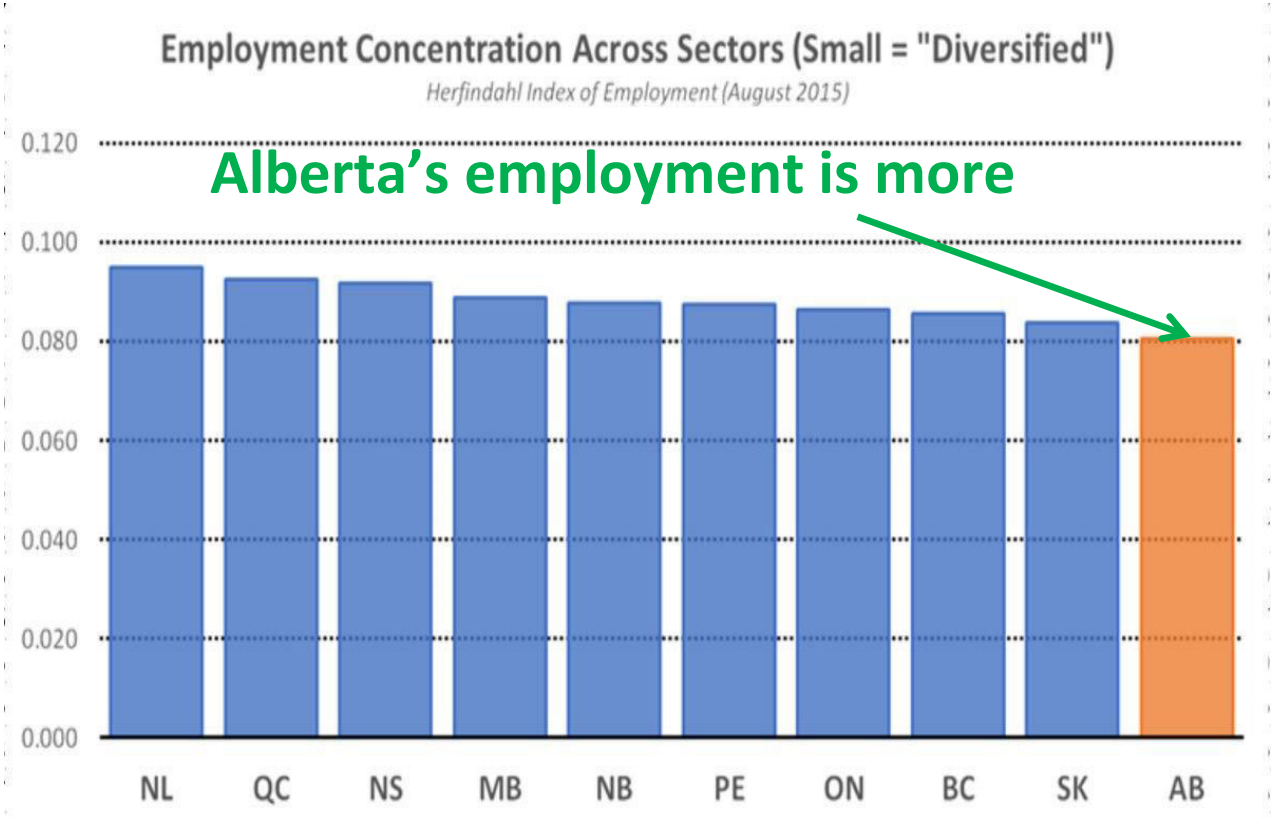


Fixed Capital Formation (billions of dollars) Alberta, 2011-16



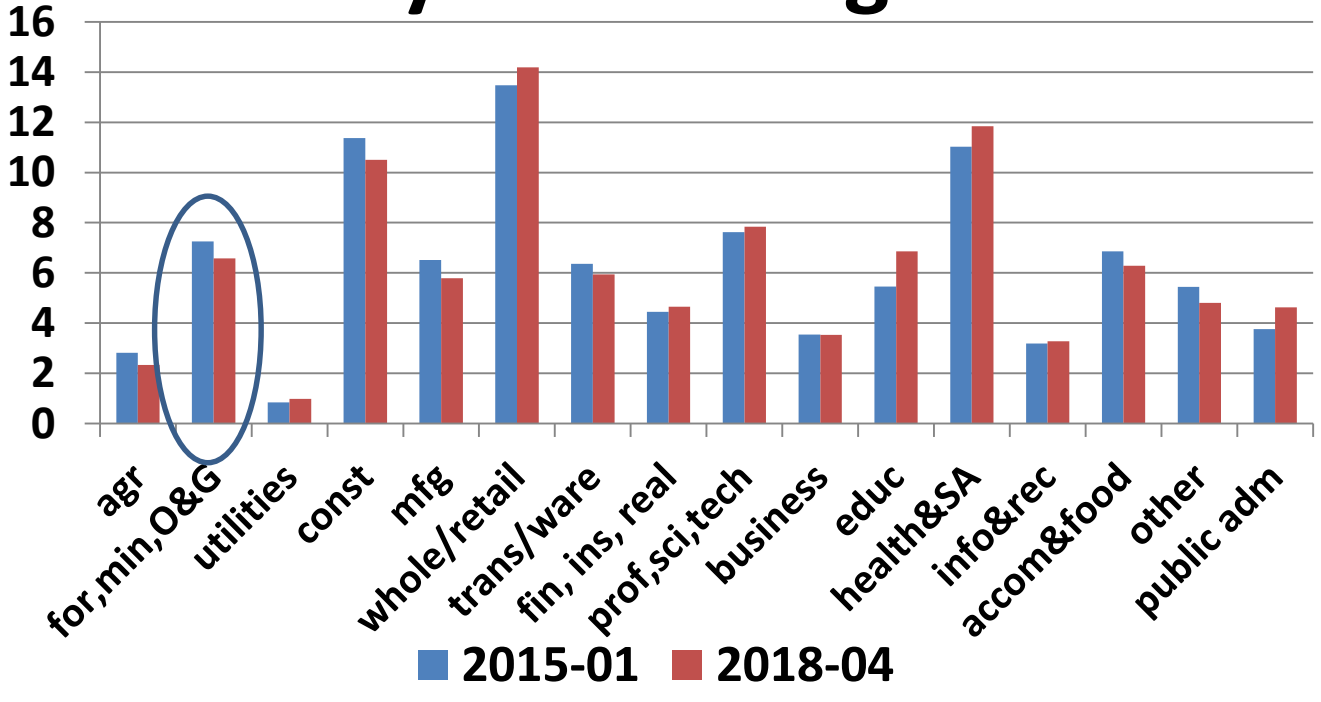
Percentage Change in LFS

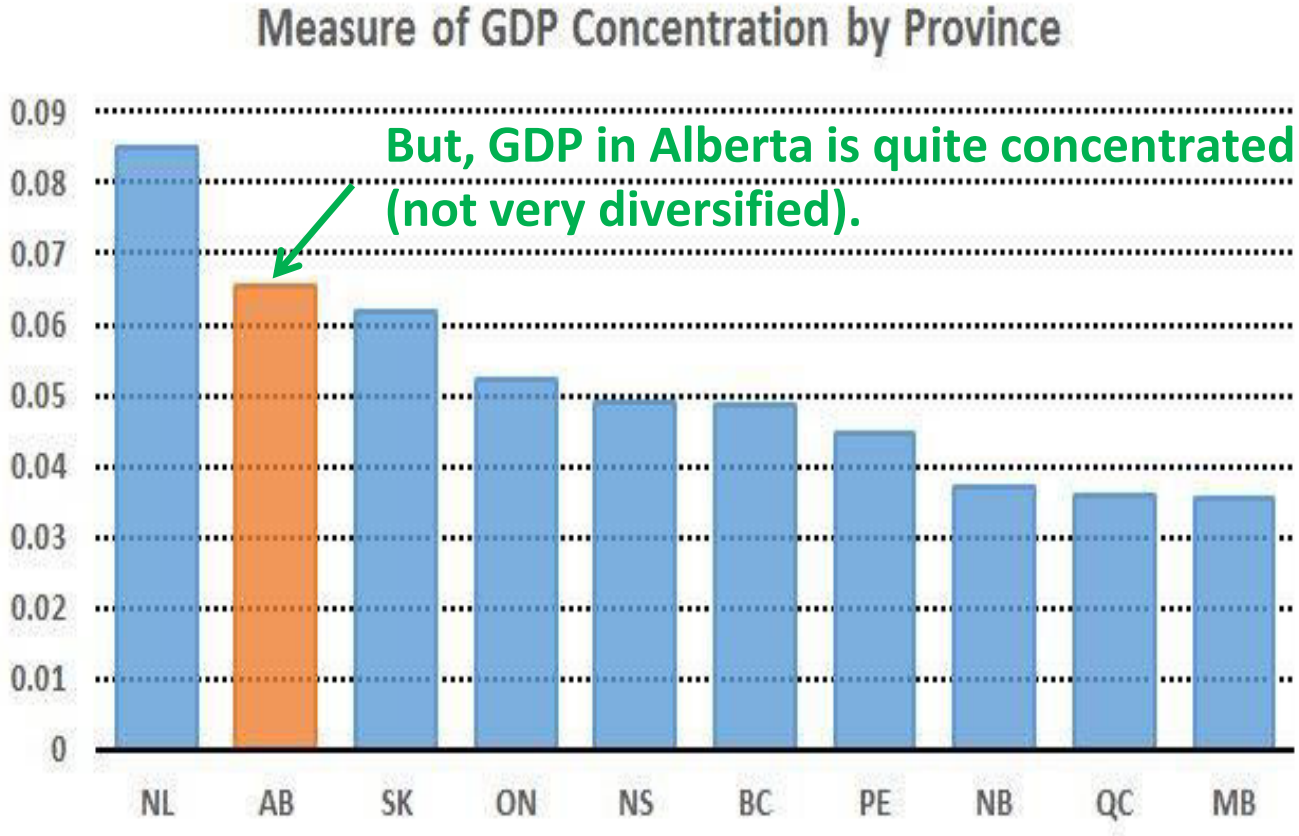




Source: Trevor Tombe.

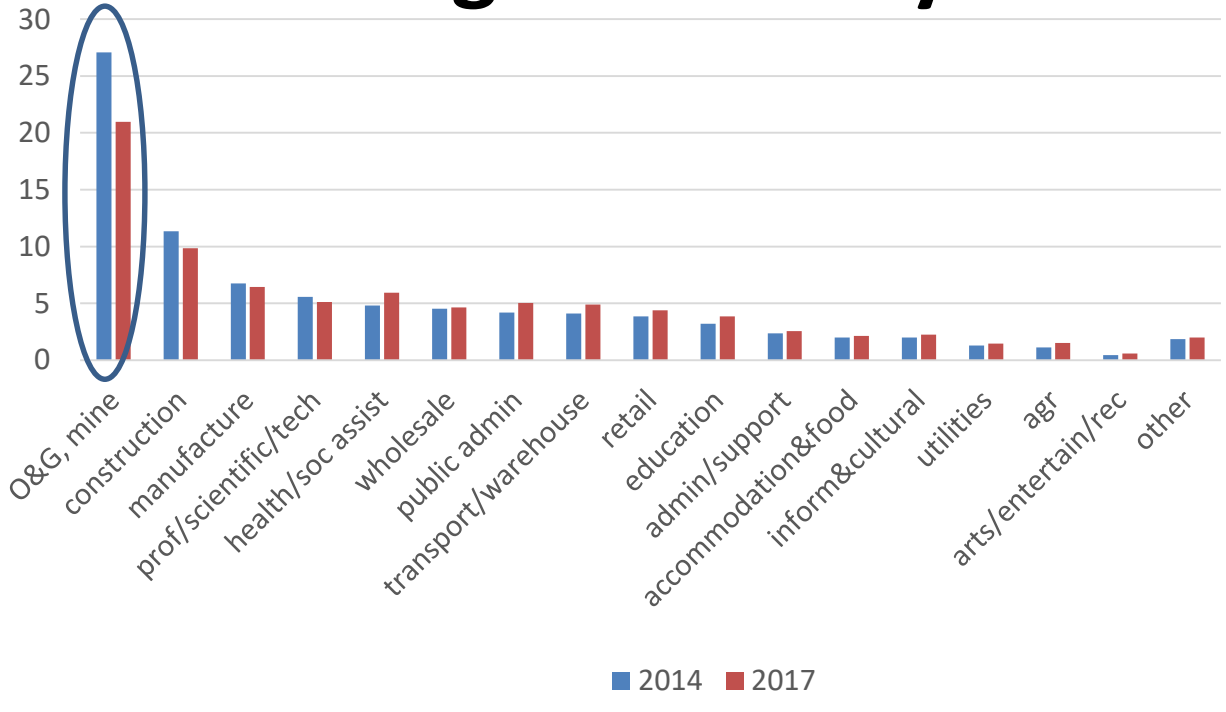
Alberta Employment (LFS) by Industry: Percentage Shares





Source: Trevor Tombe

Alberta GDP:
Percentage Shares by Industry



Major Current Policies

Major Current Diversification Policies:

Budget 2016, Climate Leadership Plan

- Carbon Levy (now $30/tonne)
- Investment of $6.208 billion over 5 years. That is, $1.24 billion/year.

Major Current Diversification Policies (continued):

Budget 2018 Initiatives:

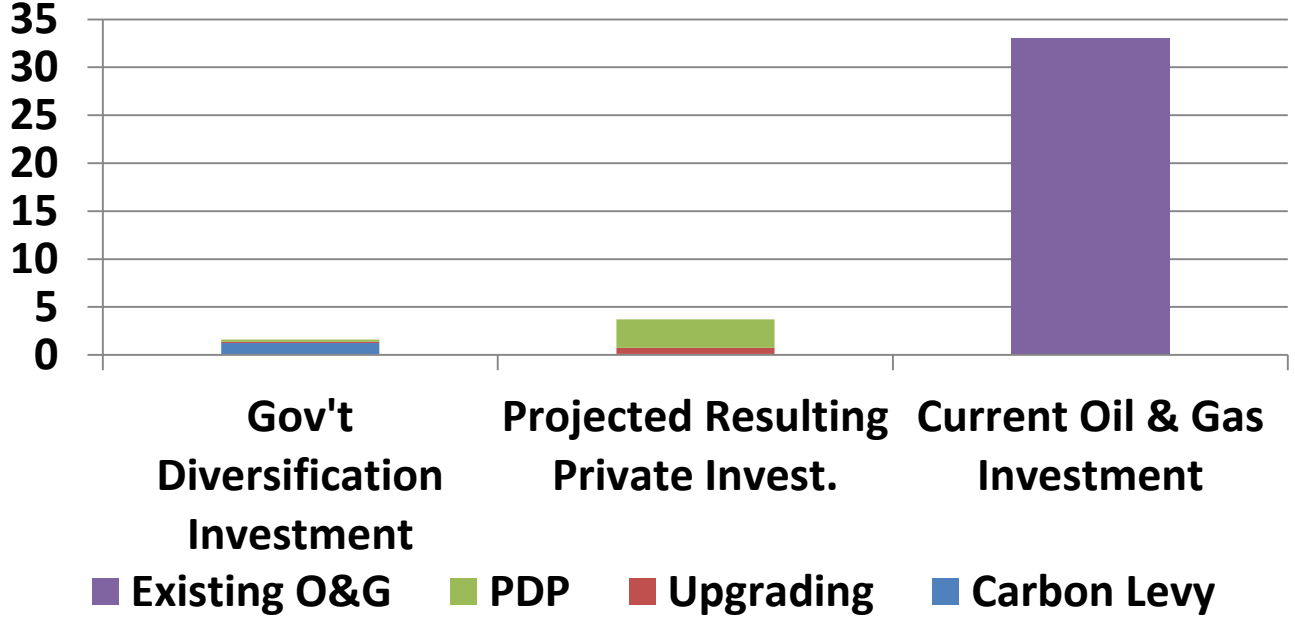
Diversification of Energy Sector

- Partial Upgrading -- $1.0 billion over 8 years
  incentives for partial upgrading of bitumen (to generate $5 billion in private investment and 200 full-time jobs)
- Petrochemical Diversification (phase 2) -- $500 million in royalty credits (# of years???) to generate $6 billion in new investment and 200 full-time jobs.
- Petrochemical Feedstock Infrastructure -- $500 million to promote extraction of additional natural gas liquids (years?, jobs?)

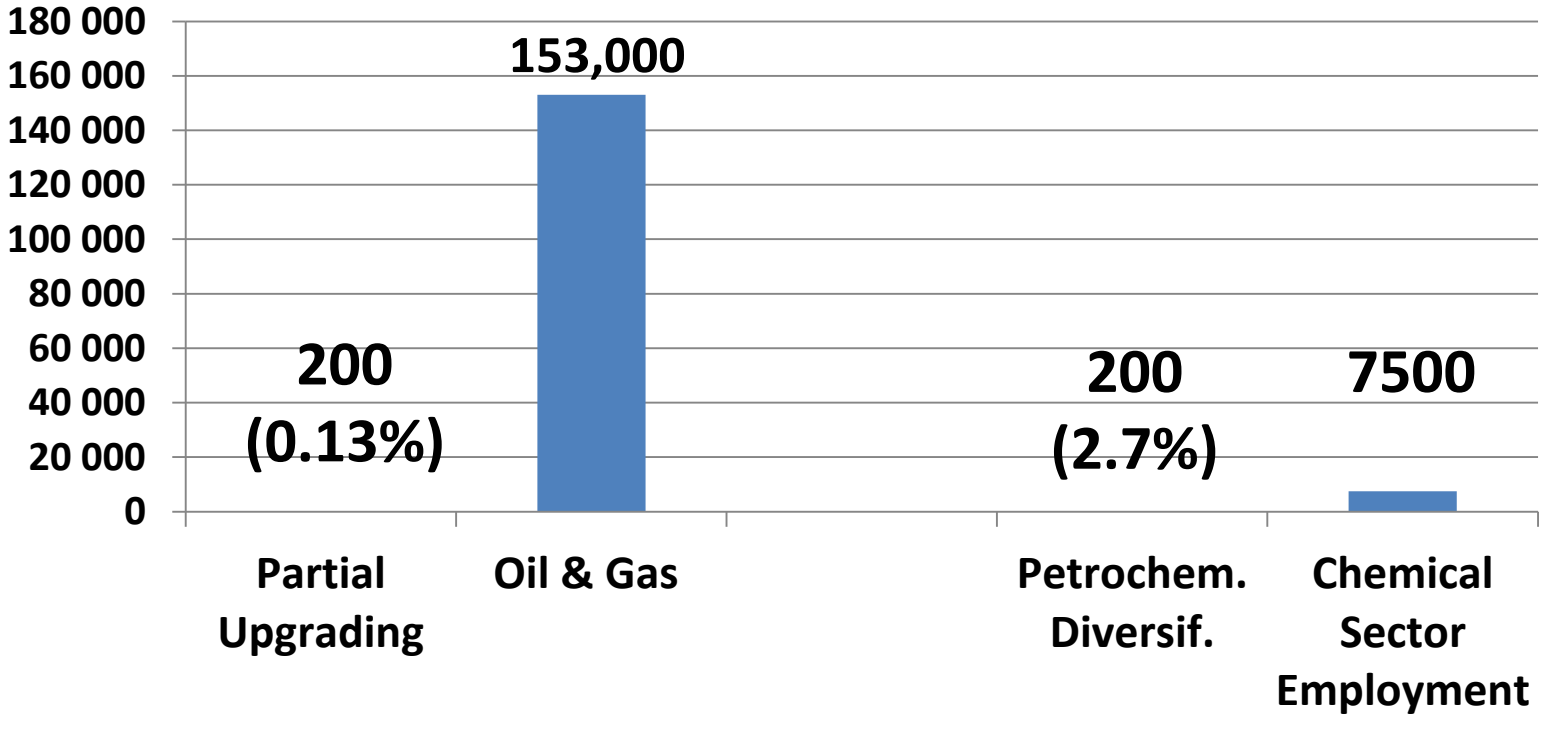
Plus, -- $80 million/year in extended tax credit programs and,
-- funds for expanded post-secondary technology programs

Potential Impacts

Average Annual Investments in Diversification (billions of dollars) and Current Annual Investment in the Oil and Gas Sector



Projected Full-Time Employment from Diversification



And the carbon levy

- chiefly impact the sources of energy in the utilities sector, (e.g., diversify sources of electricity -- but the economy??)
- but the utilities sector represents only about 1% of employment and 1.4% of GDP

Diversification policy impacts may limited (even weak) but they are not necessarily bad policies.

Carbon Levy

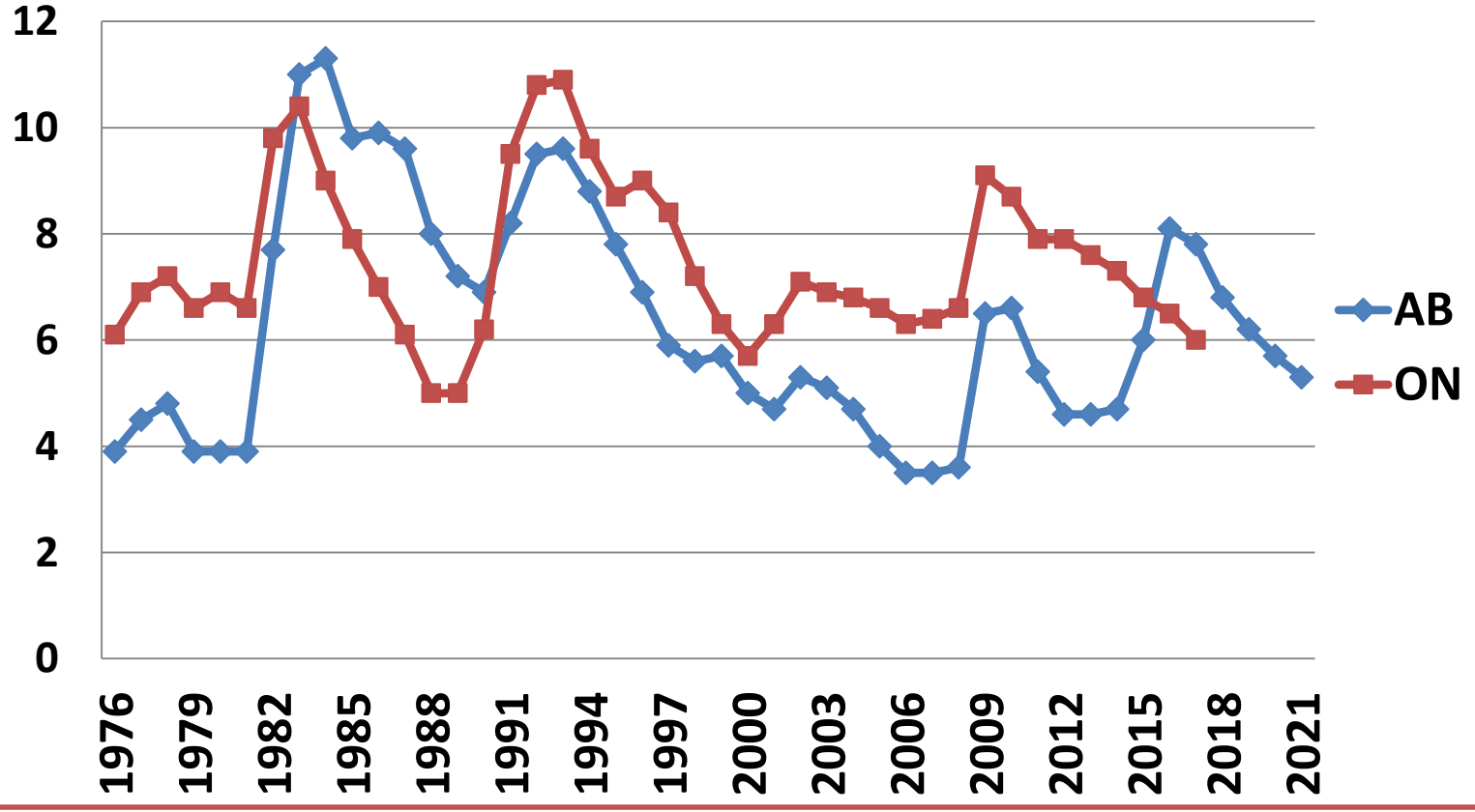
- effective and efficient policy for reducing carbon emissions
- can be fair

Energy Sector Diversification

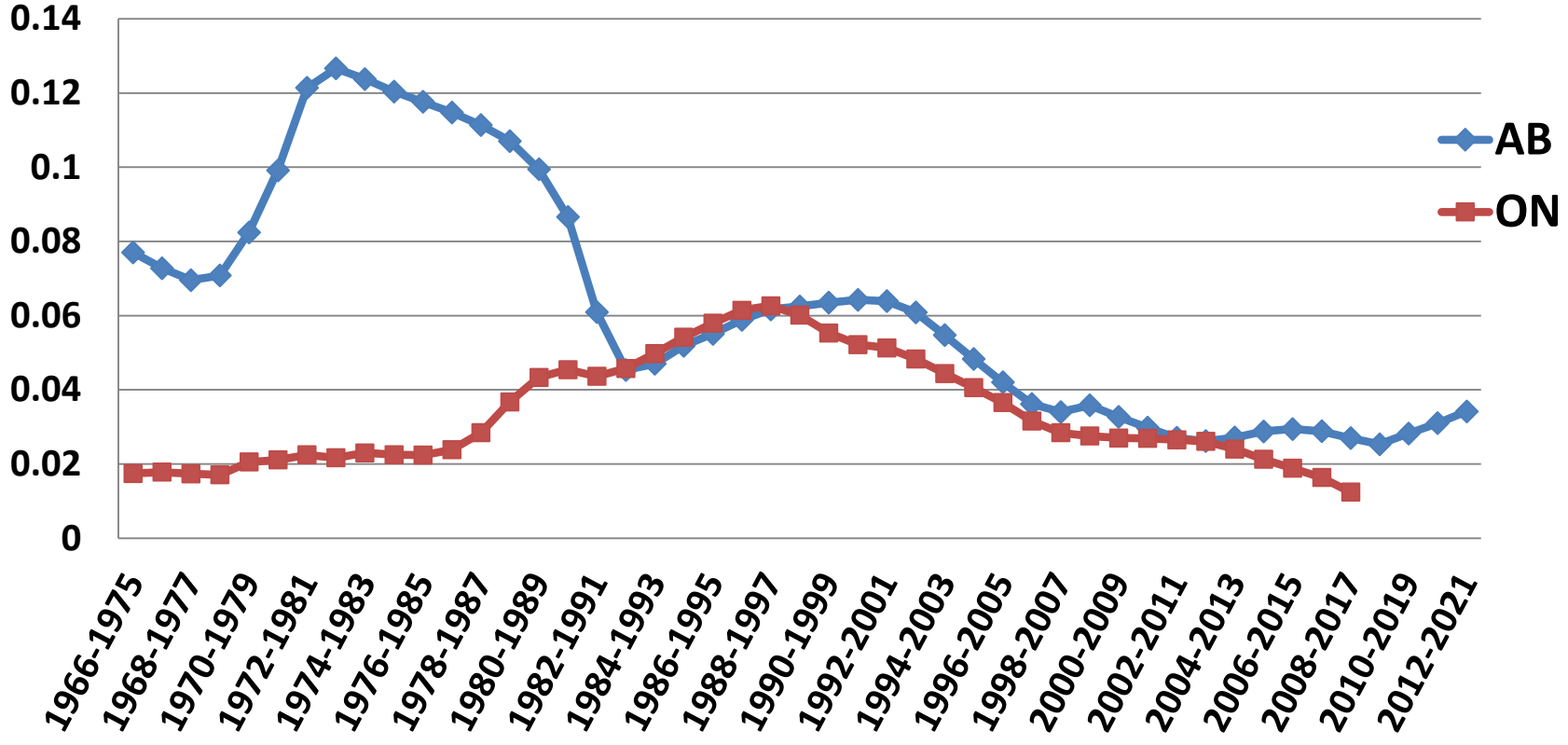
- promote technological development
- energy market diversification and broadening
- expand pipeline capacity
- expand potential for new production

Effective at Stabilization?

Unemployment Rates in Alberta and Ontario, 1976 to 2081 (with Alberta forecast)



Regional Economic Instability Indices (Employment) for Alberta and Ontario, 1966-75 to 2008-17 (with Alberta forecast to 2012-21)



* Update of Dahlby, Masaspac and McMillan in Boom and Bust Again (2013).

Conclusions

Diversification is:

- Challenging; that is, difficult to achieve
- Efforts by gov't are incremental, marginal and have small impacts
- Likely have very little impact on economic stability
- Alberta economy already relatively stable
- And, still a considerable "Alberta Advantage"

The recession reduced it but the
"Alberta Advantage" is still significant

a) GDP per capita is 40-60% greater than other provinces

b) Average Weekly Earnings are 13.5% greater than in Ontario

c) Primary household incomes are 22% greater than in Ontario

d) Alberta government's revenue generating capacity is 30%-40% above the provincial average (and 20 % greater than any other province)

e) Albertans have $2575 per capita tax advantage over the next lowest tax province (i.e., tax effort 28% below the provincial average)

So,

Have realistic expectations for diversification
(i.e., for repositioning & restructuring efforts)

Alberta economy is relatively stable

Plus, remember

Still a considerable "Alberta Advantage"
(oil & gas has created "good jobs")

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