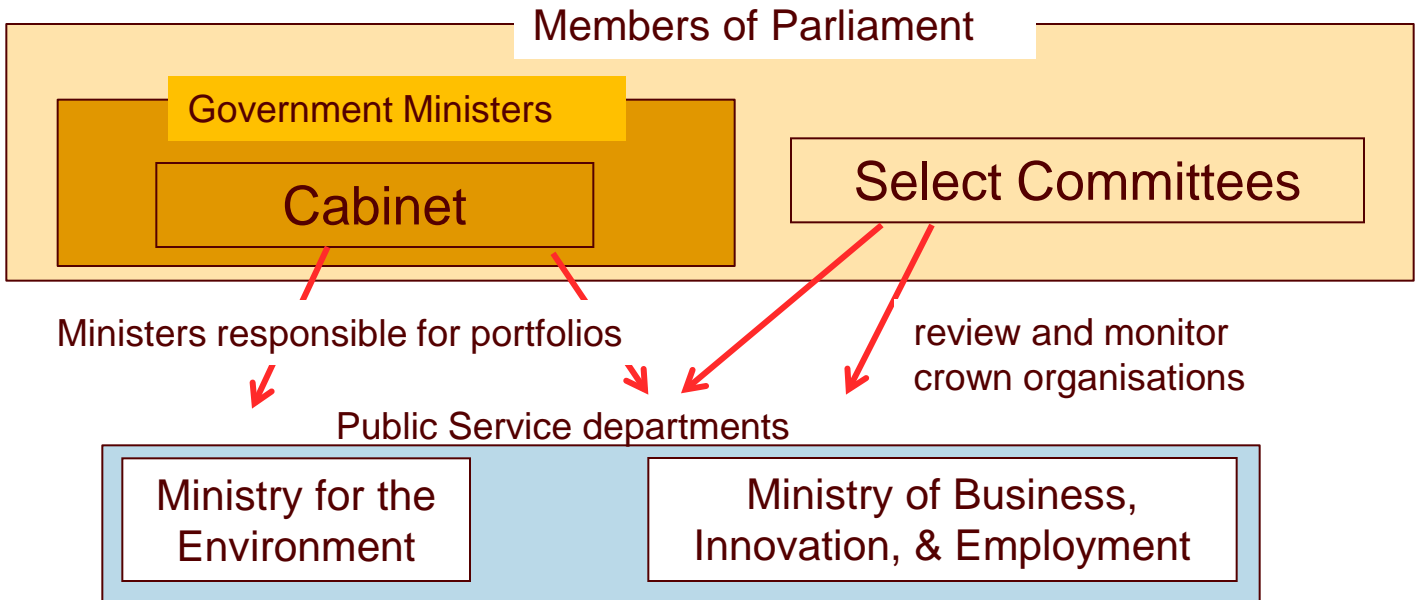


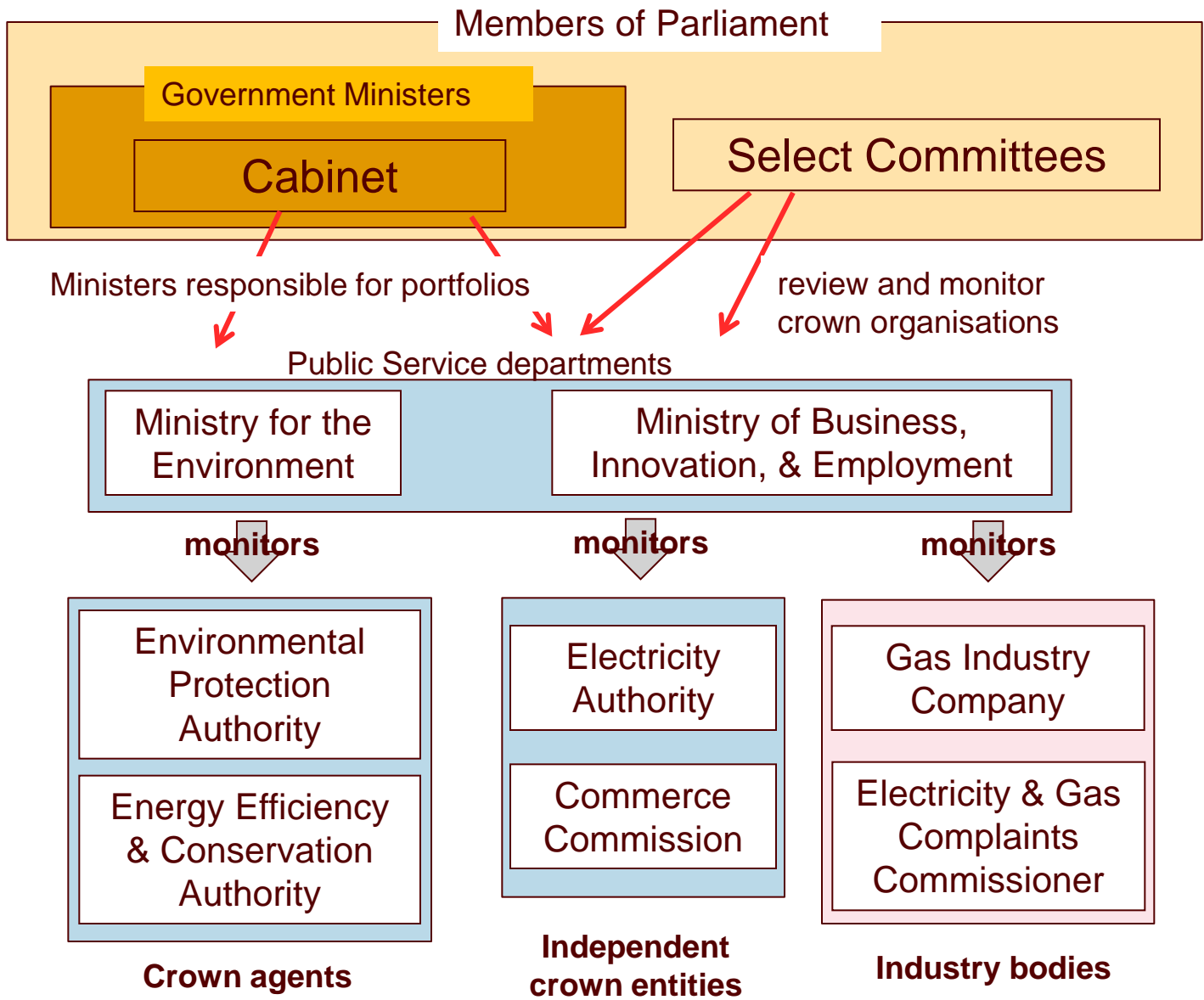
# New Zealand Overview

Asia Pacific Energy Regulatory Forum: August 2014  
Presented by: Dr Brent Layton, Chair, Electricity  
Authority

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# Overview of NZ regulatory structure





# Overview of NZ market structures

# Oil Industry

- 35 firms (9 majors) in oil/gas field exploration and operation
- Mostly in Taranaki region
- Firm plans for over 100 new wells



**Major Taranaki oil/gas fields**



# Oil Industry

- 35 firms (9 majors) in oil/gas field exploration and operation
- Mostly in Taranaki region
- Firm plans for over 100 new wells
- Mostly export to Australia for refining
- Marsden Point refinery uses imported crude oil, and supplies about 70% of NZ requirements
- Total domestic crude production ~100PJ p.a. (17 MMbbls)
- Total consumption ~300PJ p.a.
- MBIE manages exploration permits



**Major Taranaki oil/gas fields**



**Marsden Point oil refinery**



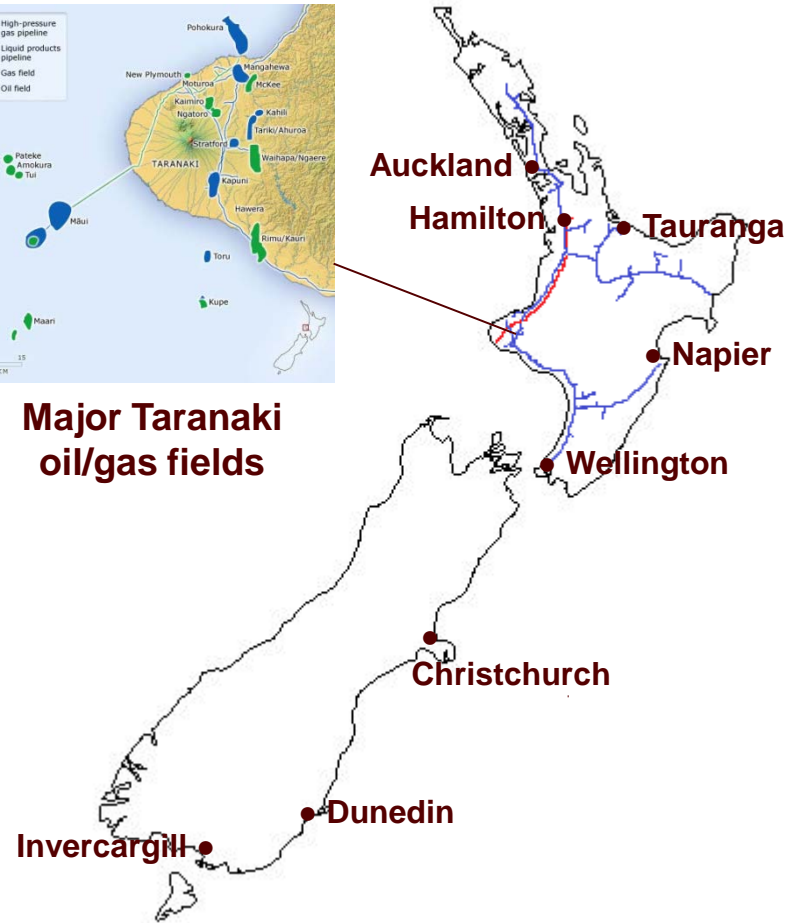
**Distribution terminal facilities**

# Gas Industry

- No direct imports or exports
- All production is in Taranaki region
- Gas pipeline used for bulk distribution in the North Island
- LPG used for distribution in the South Island



**Major Taranaki oil/gas fields**





# Gas Industry

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- All production is in Taranaki region
- Gas pipeline used for bulk distribution in the North Island
- LPG used for distribution in the South Island
- Taranaki underground gas storage provides some flexibility (capacity out ~45TJ/day)
- Total gas production ~180PJ p.a.
- Largest consumers are Methanex methanol plant in Taranaki (~45%), and electricity generation (~30%)
- GIC is the primary regulator



**Major Taranaki oil/gas fields**



**Gas-fired generating plant**



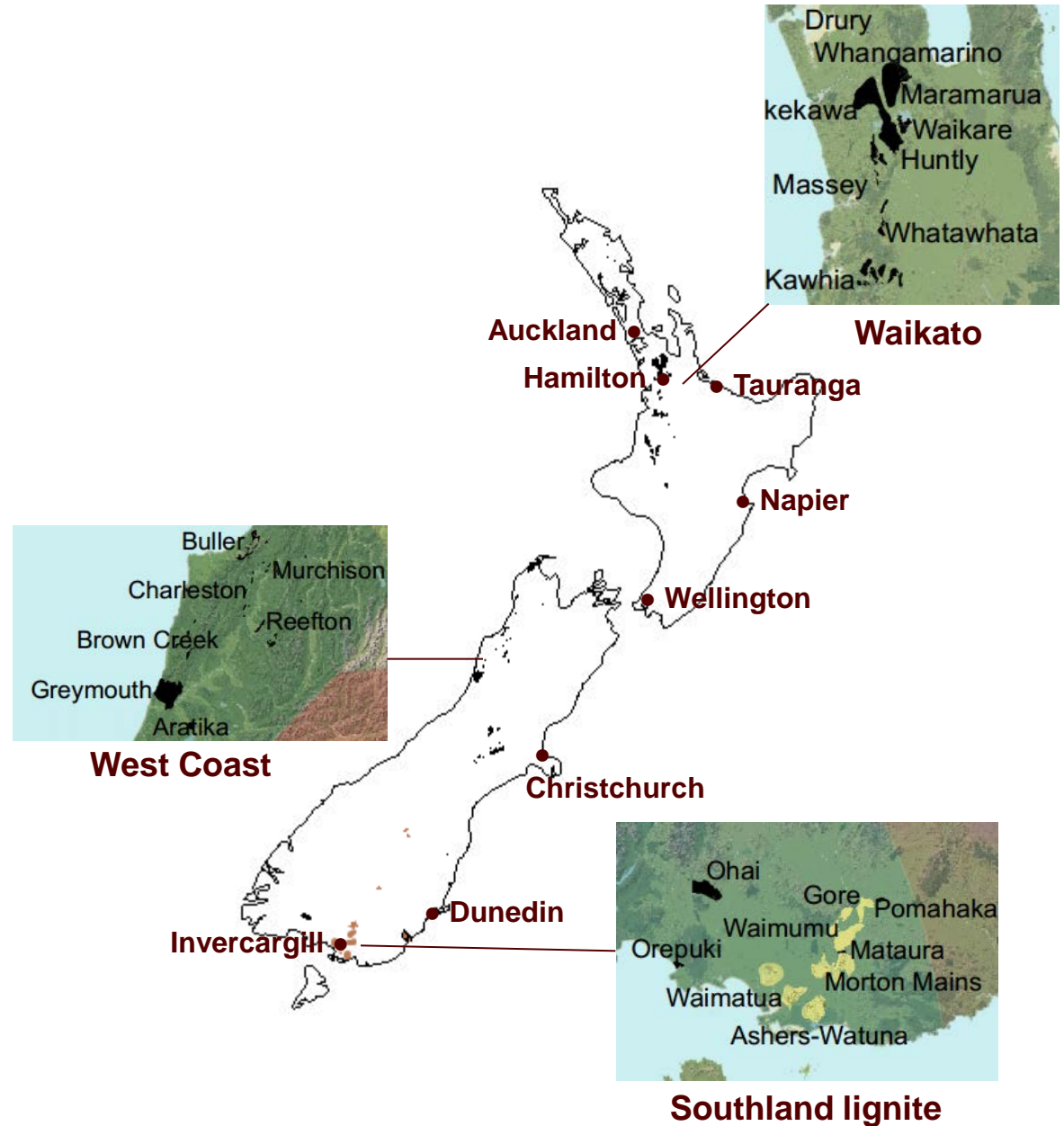
**Gas storage**



**Taranaki methanol plant**

# Coal Industry

- Coal reserves found in many regions with significant, largely untapped, lignite deposits in the far south
- Production concentrated in the West Coast (50%), Waikato (37%) and Southland (10%) regions
- Total production ~5 million tonnes/year



# Coal Industry

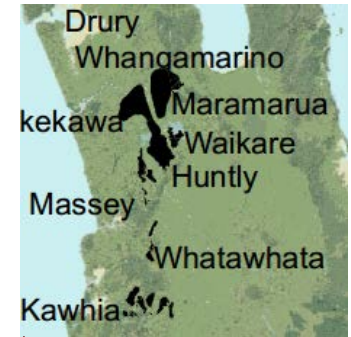
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- Production concentrated in the West Coast (50%), Waikato (37%) and Southland (10%) regions
- Total production ~5 million tonnes/year
- Most premium bituminous coal is exported (about 50% of total production)
- Previously imported up to 25% of total consumed coal but reduced significantly in recent years
- Electricity generation used to account for ~40% of total coal consumption, but falling with recent plant retirement.



**Coal-fired generating plant**



**Glenbrook steel mill co-gen**



**Waikato**



**West Coast**



**Southland lignite**



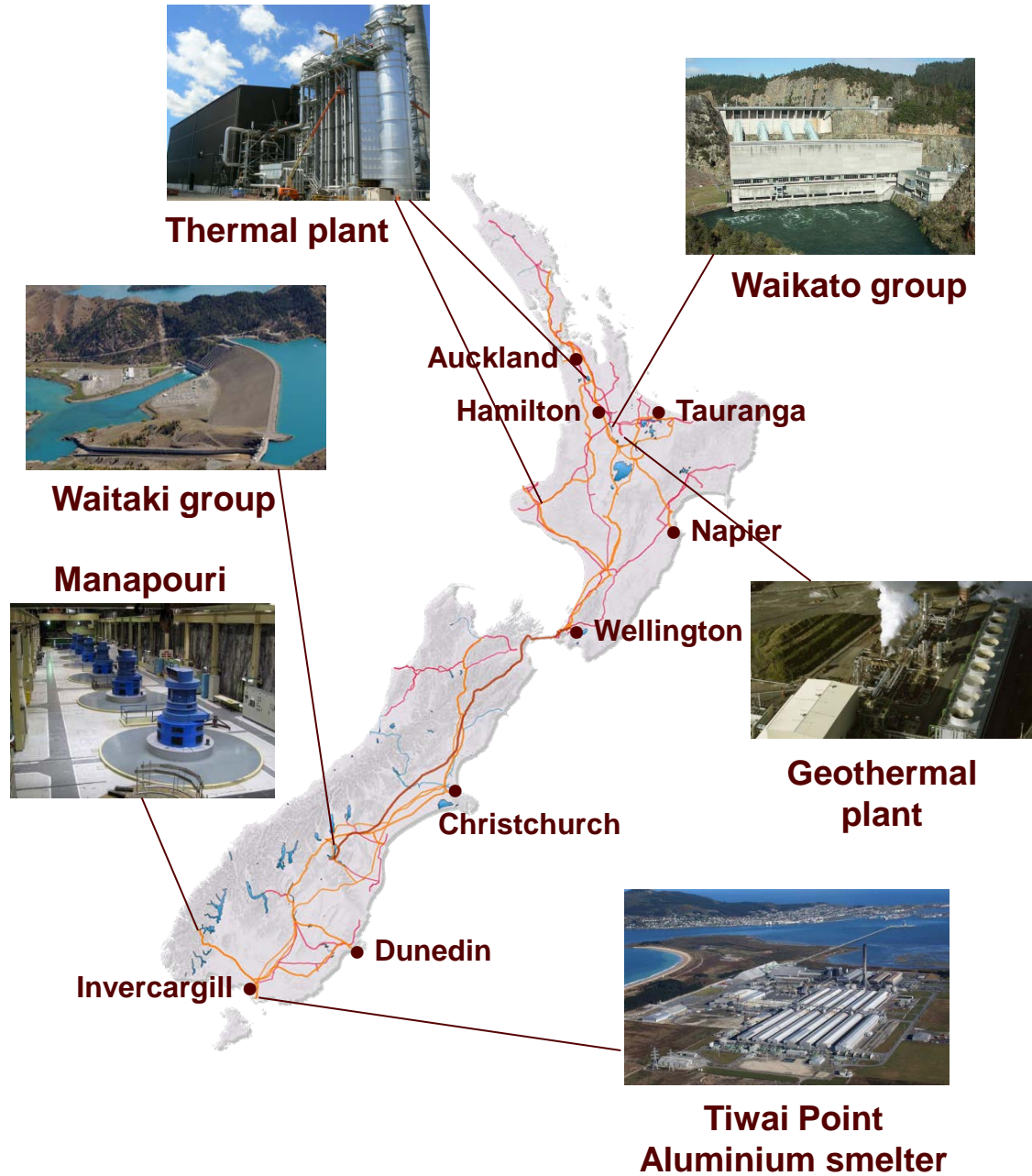
# Electricity Industry

- Hydro generation accounts for about 60% of annual generation on average
- 1000 MW of baseload geothermal plant (10% of total capacity)
- 600 MW of wind (6% of capacity)
- Comparatively little hydro storage (roughly 2 months output) combined with variable rainfall make hydro-firming plant essential



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- 3000 MW of baseload and peaking thermal plant (60% gas / 30% coal)
- Supply via national grid (generally 110kv/220kv) with main islands connected by 350kv HVDC link.
- Consumption concentrated in major centres and Tiwai Point aluminium smelter (~15% of load)
- >60 generators, 14 retailers, 28 local distribution coy's, 1 grid owner/operator
- Primary regulator is the Electricity Authority



# Electricity market structures and regulation

Resource exploration & development	Regional Councils : Resource Management Act consent
	EPA : RMA consents

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Ongoing supply operation	RMA operating requirements
	EPA emissions trading
	EA regulation
Distribution	EA regulation
	Com. Com. revenue control
Retailing	EA regulation
	EGCC disputes

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Commerce Commission : anti-comp. conduct

Worksafe : Health and safety regulation

Statistical information requirements



# Electricity market structures and regulation

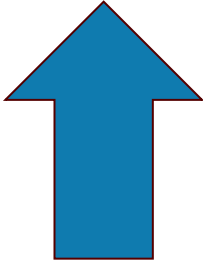
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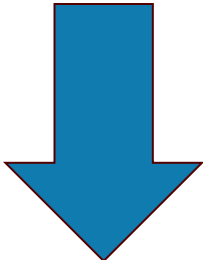
Worksafe : Health and safety regulation

Statistical information requirements

Facilitating markets



Wholesale spot market  
 Hedge market  
 FTR market  
 Ancillary-services market



Electricity Authority regulation

# Discussion