



Reform of three waters sector: Risks and opportunities

Andreas Heuser, May 2021



Agenda

Background: What is the government doing?

Three key issues:

- **Which councils should amalgamate?**
- **What are the benefits of reform and who gets them?**
- **What is the right governance and legal framework?**

Questions and discussion

***Special topic:* Economic regulation of water service providers (if time allows)**

Background



Three waters sector is being reformed

There are major problems with the water sector

People agree that:



Management should improve



Investment should increase



Regulation should improve





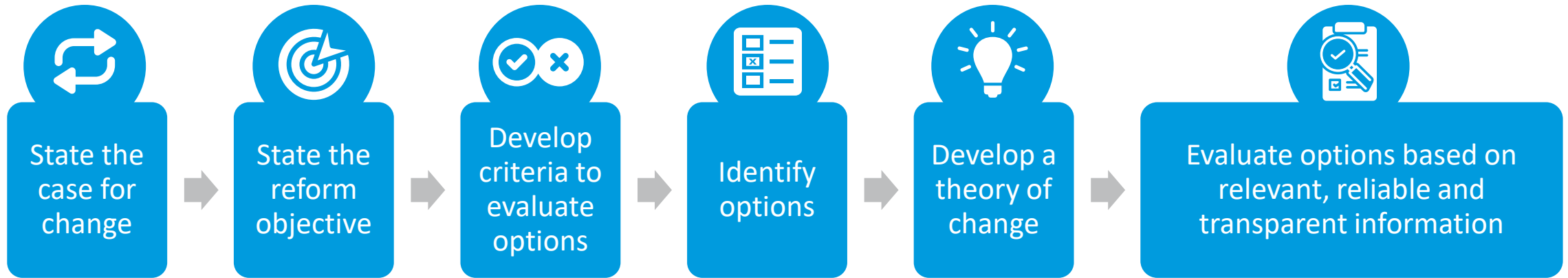
Once in a generation opportunity to reform

Water services are critical to wellbeing

Objective should be to provide safe, resilient, reliable, and customer responsive water services, at least cost

It is important to get this right

Major policy change deserves proper process



Unfortunately, standard policy process does not appear to have been followed

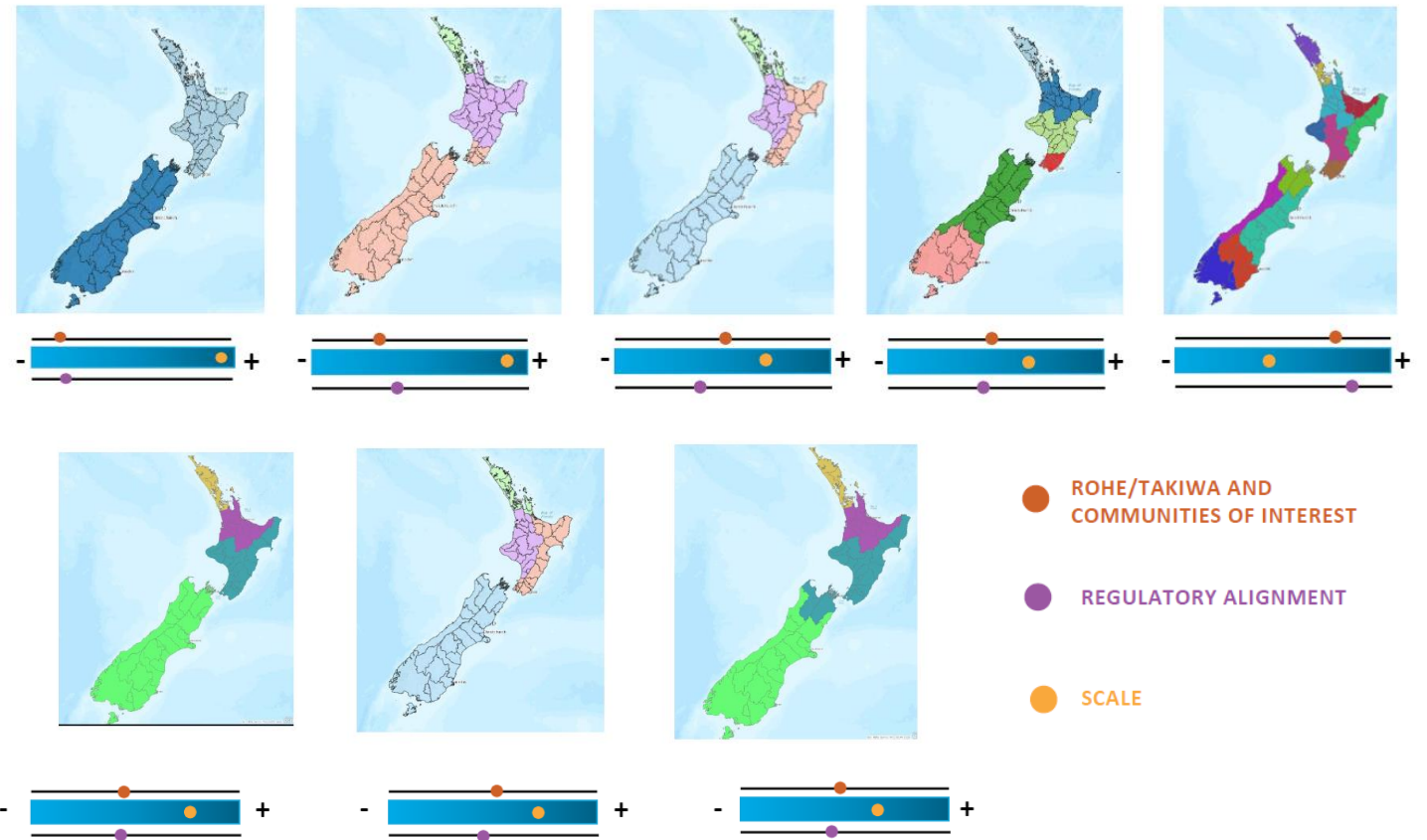
Government's proposals for regional water corporations

Water services are currently provided directly or indirectly by 67 local authorities

Currently thinking suggests there will be between three and five entities

Scale is the major driver of choices between constellations

Water quality regulator is being established (Taumata Arowai)



Government's proposals for regional water corporations

Current thinking:

Independent statutory water corporations

Local authorities and mana whenua appoint a "Governor Representative Group"

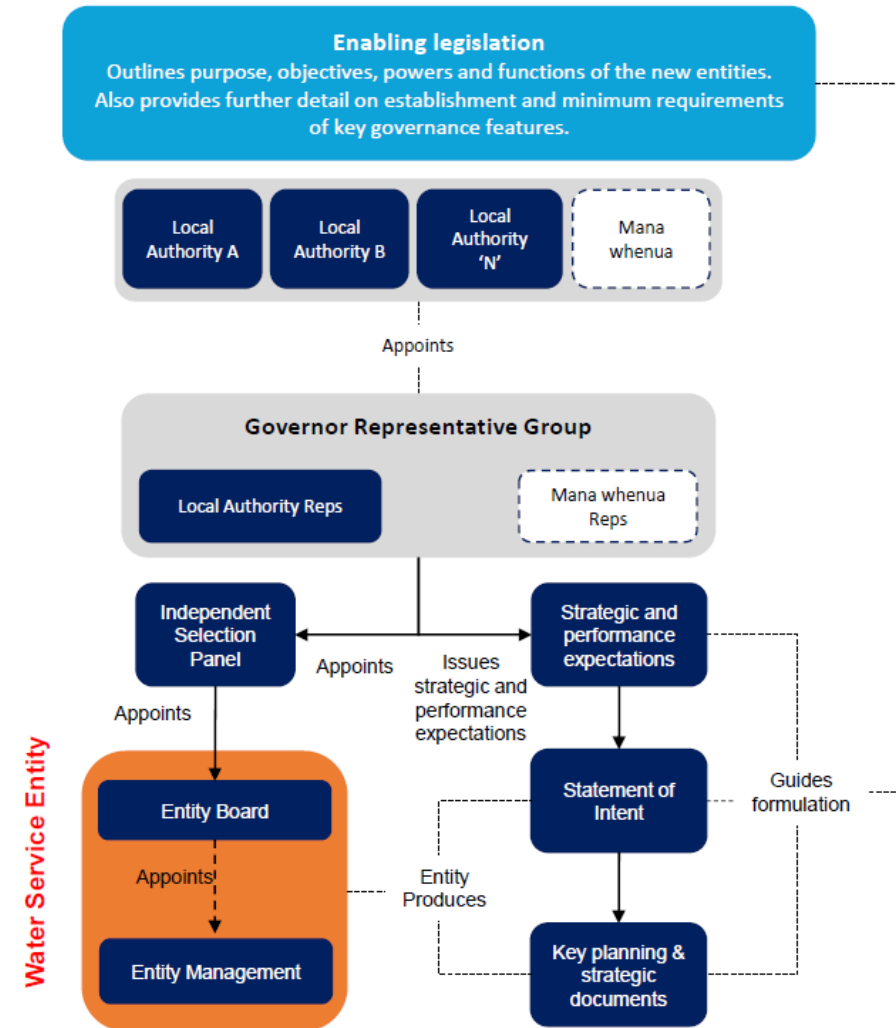
...which in turn appoints an independent selection board

...which in turn appoints the water corporation board

Separate balance sheet

Professional board

Final proposals in Q3 and Q4 2021



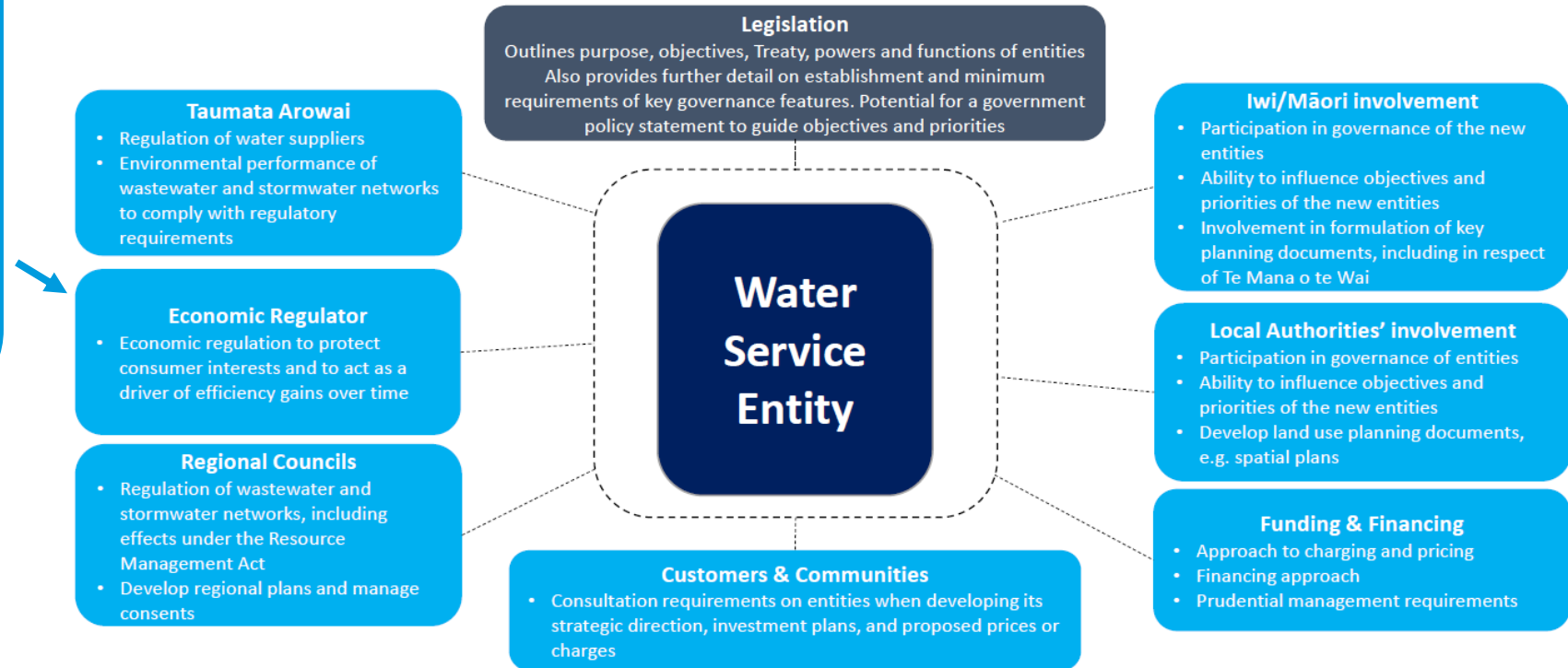
Government's proposals for regulation

A robust regulatory system

Water entities will operate within a new regulatory system that balances stakeholder interests

Economic Regulator

- Economic regulation to protect consumer interests and to act as a driver of efficiency gains over time



Which councils should amalgamate?

What are the benefits of the reform proposal and who gets them?

What is the right governance and legal framework?

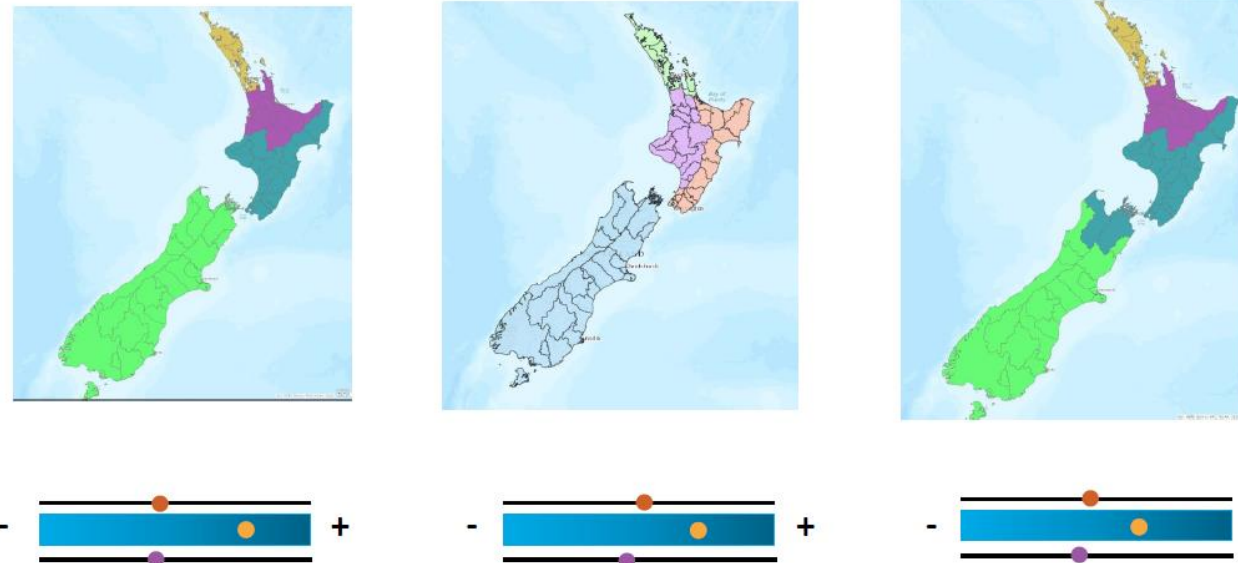


Which councils water services will be rolled up together?

From Department of Internal Affairs, March 2021 public roadshow (not government policy):

Each scenario has different combinations

ILLUSTRATIVE



Key
● ROHE/TAKIWA AND COMMUNITIES OF INTEREST ● REGULATORY ALIGNMENT ● SCALE

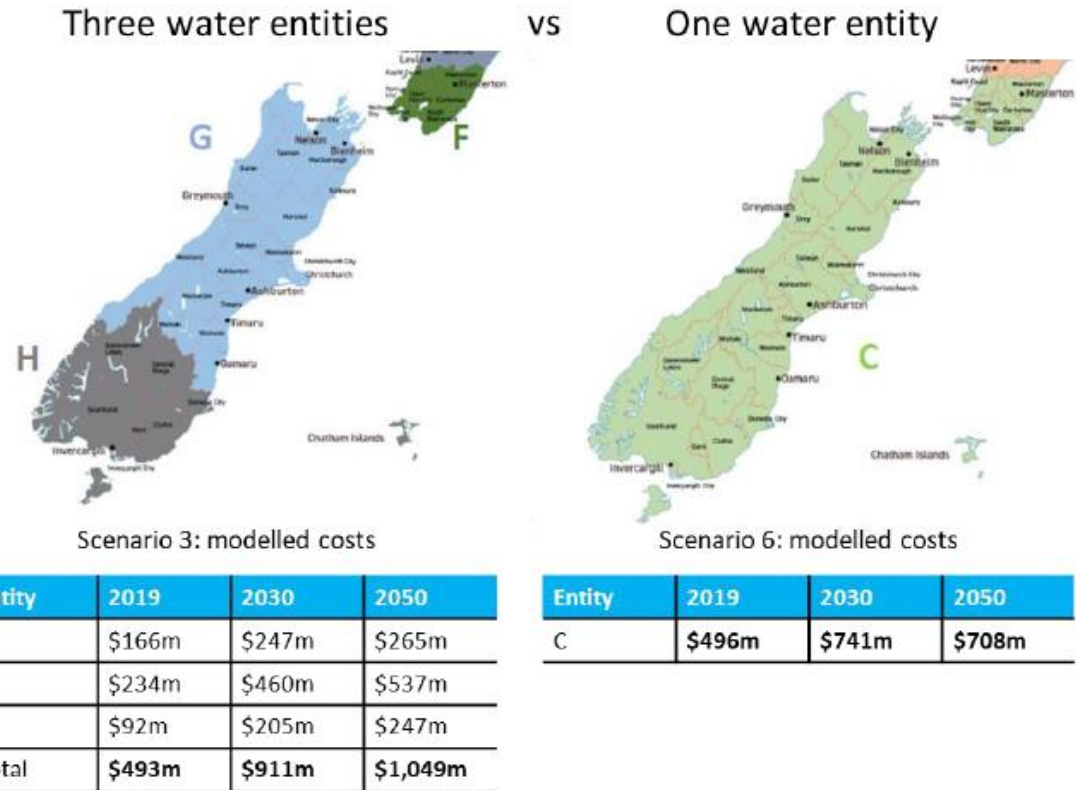
DIA March 2021 Engagement Slide Deck, p. 35

Which councils water services will be rolled up together?

Government's modelling (by Scottish water regulator) suggests amalgamations drive significant economies of scale

Results are highly implausible

Three entities vs one entity apparently drives a 30 percent cost saving



Castalia analysis from Water Industry Commission for Scotland documents for DIA

Which councils water services will be rolled up together?

Some strange options have been considered:

This option drives the lowest costs

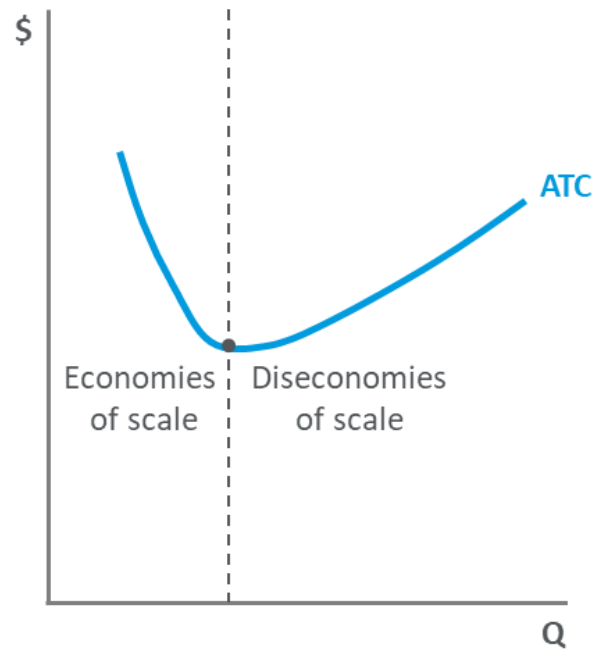
- Entity A = Auckland, Northland and all of South Island
- Entity B = Rest of North Island



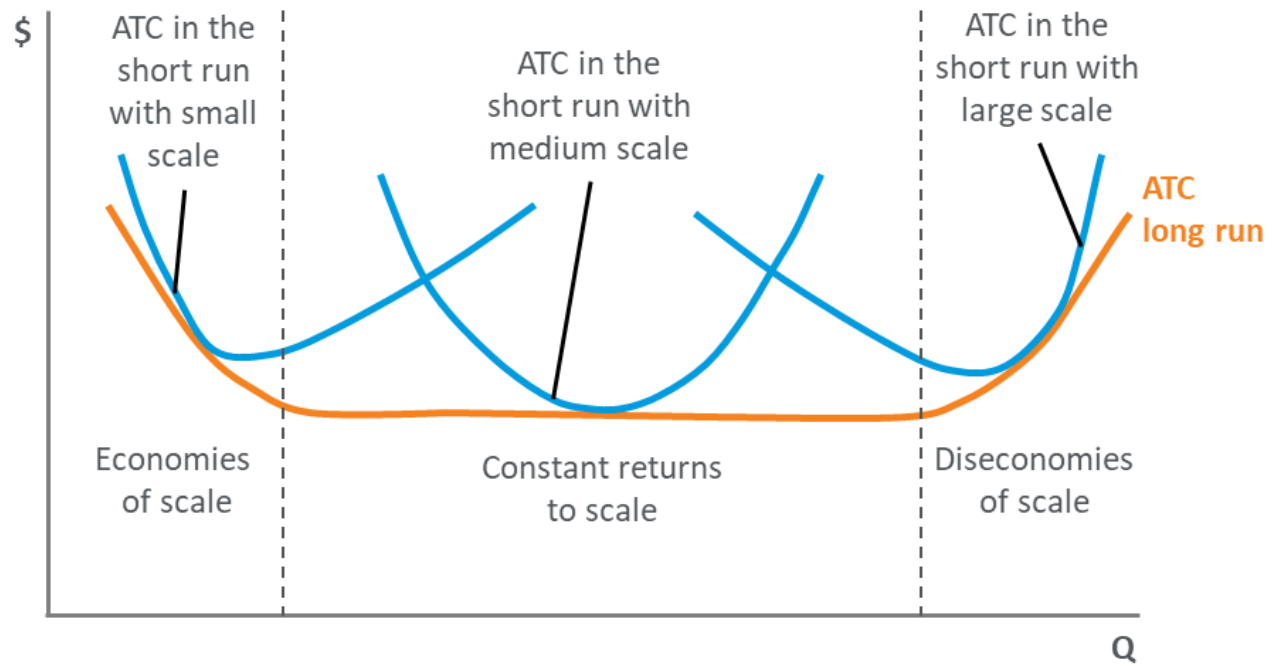
Water Industry Commission for Scotland analysis for DIA

Economic theory on economies of scale – textbook definition

Average Total Cost in the Short Run

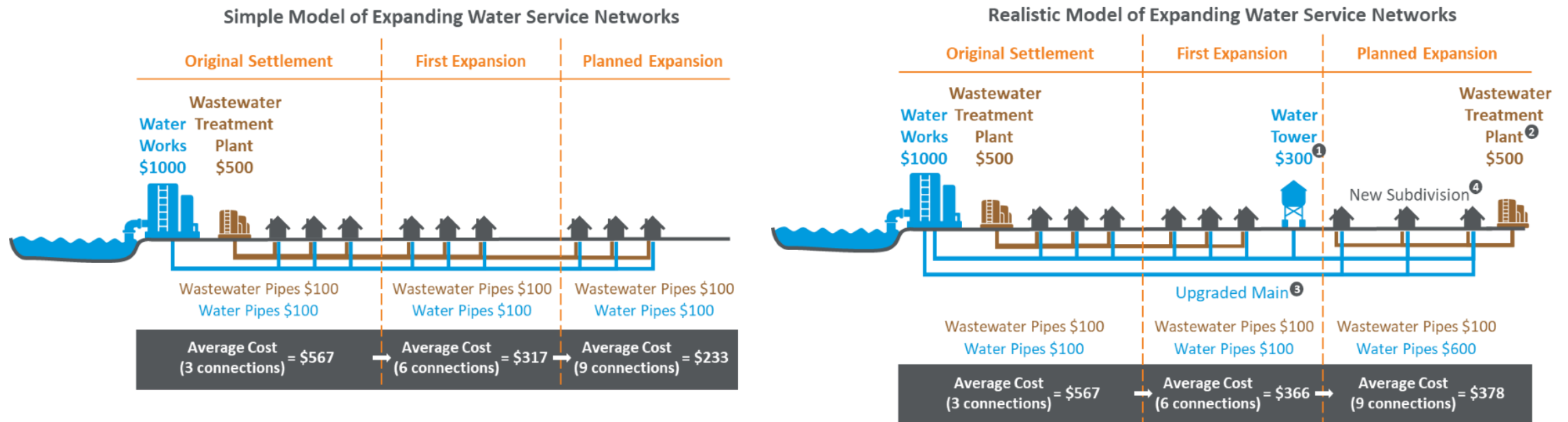


Average Total Cost in the Long Run



Source: Mankiw (2018), Principles of Economics

Economic theory on economies of scale - applied to water sector



Strong plant economies of scale in water treatment does not mean that there are economies of scale *at the level of the whole network*

Empirical evidence on economies of scale

None of the empirical evidence (collected by the government's own consultants) provided evidence that economies of scale in production can be generated by amalgamating water utilities

Productivity and efficiency measurement in the water industry
Abbot and Cohen (2009)

Size and Scope Economies in Water and Wastewater Service
ACIL Tasman (2007)

Literature Review Global Study on the Aggregation of Water Supply and Sanitation Utilities
Ferro (2017)

Economies of scale in the Water Sector: a survey of the Empirical Literature
Ferro et al (2011)

Underlying Costs and Industry Structures of Metropolitan Water Industries IPART (2007)

Financing Water Investing in Sustainable Growth
OECD (2018)

Some benefits from scale

Capital expenditure:

- Economies of scale in procurement due to greater bargaining power
- Optimisation of capital works programmes across amalgamated entity. Can generate larger cost savings if significant capital works required

Operating expenditure:

- Rationalisation of management and operations across amalgamated entity

However, these benefits are usually a relatively small proportion of the overall cost of water services and **offset** against costs of reform

Have to do the work to assess the benefits on a council by council basis

Which councils should amalgamate?

What are the benefits of the reform proposal and who gets them?

What is the right governance and legal framework?



What are the benefits of reform?

What are the benefits, who is getting them, and how will they be distributed?

Benefits can be evaluated based on



Transfers of assets,
debt and operations to
new regional entity



Water tariffs between
different areas within
new regional entities
boundaries

Transfer of assets, debt and operations

- Challenging discussions and negotiations likely
- Grasshopper and the Ant (Aesop):
 - Some local authorities have invested appropriately (eg, kept up with depreciation)
 - Some local authorities have not

How will assets and liabilities be valued?

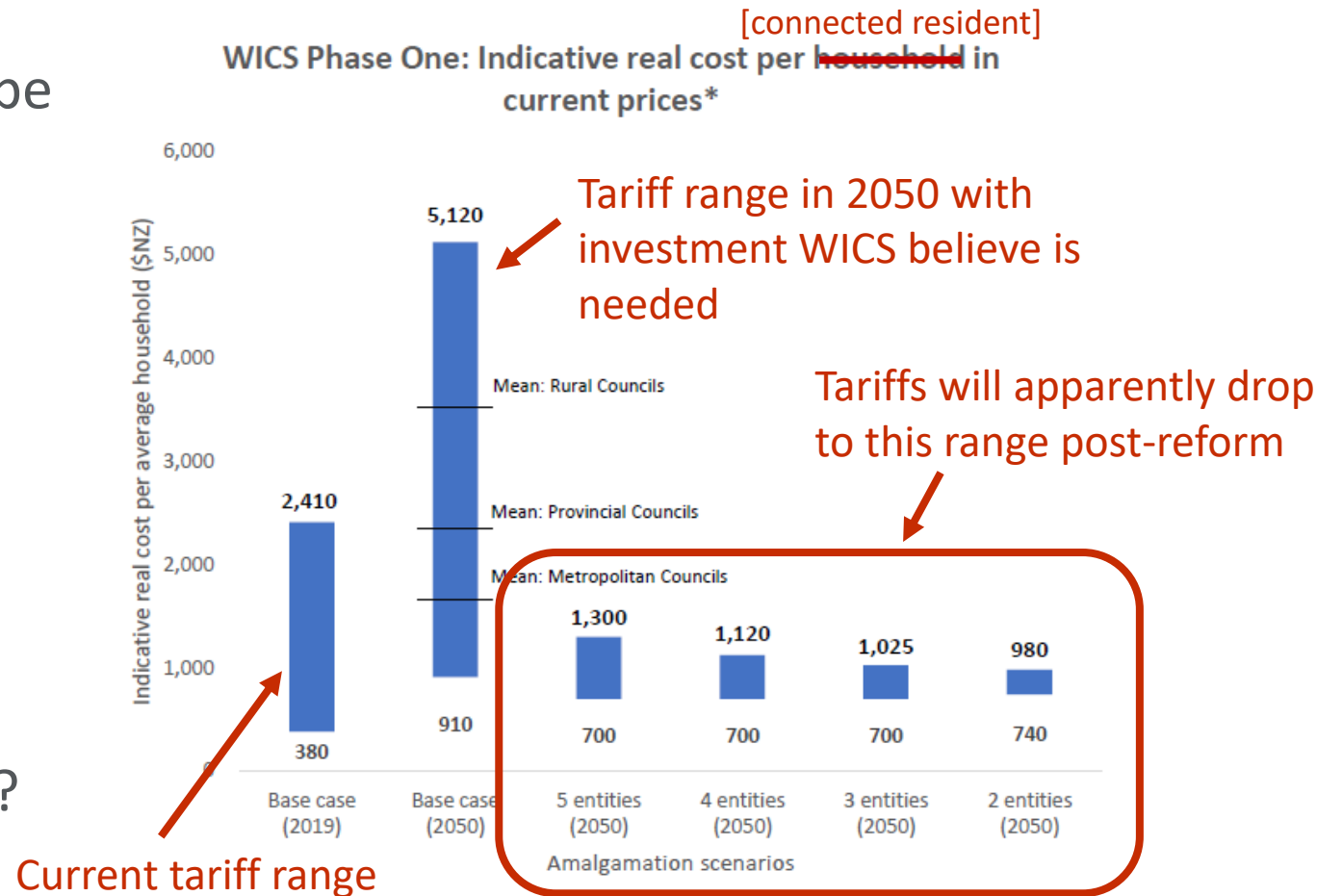
How will historical decisions be judged?

Will government's top-down and "opt-out" approach really result in an optimal sharing of costs and benefits?



Water tariffs between different areas

- Cross subsidy of tariffs appears to be assumed (“equity” and “future affordability”)
- How should cross subsidy be defined?
- Should all customers pay the same tariff?
- What are the classes of customers?



*figures based on Water Industry Commission of Scotland initial analysis of publicly available data and subject to change as part of further analysis using more detailed data collected from local authorities

Which councils should amalgamate?

What are the benefits of the reform proposal and who gets them?

What is the right governance and legal framework?



What is the right governance and legal form?

Governance and legal structure is critically important

Evaluate the options based on three important criteria



Local
accountability



Access to finance
(balance sheet
separation from local
government)



Appropriate
management of
fiscal risk

Local accountability

Customer accountability is desirable

- It gives customers the ability voice concerns and receive the level of service they want for a given price
- Local authorities have a direct relationship with Iwi, hapū, residents and water customers
- Water quality demands vary with depend on local characteristics (Motueka, Christchurch), income, cultural differences

| ACCOUNTABILITY | Local government ownership and operation | Regional- or government-owned entities | Regional privately-owned companies | Delegation to a third-party provider |
|----------------|---|--|---|--|
| Examples | United States, some Latin America, New Zealand | England and Wales (1973-1989), Tasmania, Scotland | England (1989-) | Papakura, France, Sao Paolo |
| Score | Elected officials are accountable to voters. Water issues can be election issues Local government boundaries are (generally) set | National or regional governance can promote good service, however, is highly dependent on getting supporting systems right | Private profit motive requires effective regulation. This can promote good service, but the system is not directly accountable to customers as water services seldom determine national elections | Local government is still directly accountable to customers, but constrained by terms of contract (can be long, eg 30 years) |

Balance sheet separation

Balance sheet separation is important to achieve efficient financing

- Achieving separation of, eg, Watercare’s balance sheet from Auckland Council would drastically improve access to finance, and enable investment for growth

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| Score | Access to finance is constrained for small services and those where parent government is close to its borrowing capacity | Can access finance if creditworthy. Scottish Water is financed by Scottish Government Risk from consolidation into national government debt (eg, England and Wales Regional Water Boards) | Ready access to commercial debt and equity | Ready access to commercial debt and equity |

Revenue bonds – would require reformed water service entities truly separate from Councils

Appropriate management of fiscal risk

- Fiscal risk is critically important
- Entities can always be mismanaged or make poor decisions
- Many government entities have been mismanaged in New Zealand and all over the world

Governance and ownership should be structured to reduce likelihood of



Failure to pay liabilities



Reducing investment



Default on debt



- Residual risk should be apportioned

Statutory regional water corporations: With poor customer accountability, cross-subsidy of tariffs a feature, and poor incentives to be creditworthy, residual fiscal risk is a concern

Conclusion

Will reform provide safe, resilient, reliable, and customer responsive water services, at least cost?

- Case for reforming to the proposed model is far from robust
- At least three key issues that need to be addressed:
 - Which councils will amalgamate?
 - What are the benefits and who gets them?
 - What is the right governance and legal framework?



Thank you for your attention.

Any questions?

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Thinking for a better world.

Special topic: Economic
regulation of water service
providers



Regulation of monopolies *without* a profit motive

Is regulation necessary for not-for-profit statutory entities?

- Corporate and ownership model for regional water corporations is not final
- What is the monopoly problem? High prices or low prices...
- Analogous with the 100 percent consumer-trust owned electricity lines businesses

Two key issues



Undercharging

- Wellington City now
- England and Wales Water Boards 1973-1989



Inefficiencies of management in operating OPEX

Issues for future economic regulation—differences to electricity



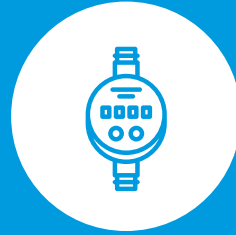
WHAT IS THE OPENING REGULATED ASSET BASE

Water assets have high costs compared to the operating costs

Return on assets would make up 80 percent of the cost of service

Real asset values very difficult to determine

English water companies set regulatory value at 5 percent of MEAV (similar to ODRC method) on privatisation—otherwise tariffs would have substantially increased

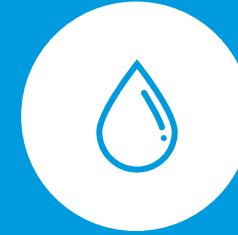


MOST WATER IS NOT METERED AND NO VOLUMETRIC CHARGES

Even in United Kingdom only half of all households metered

Cannot rely on tariffs to send signals of allocative efficiency

Cannot regulate volumetric prices



NO WHOLESALE MARKET IN WATER (LOW VALUE TO WEIGHT RATIO)

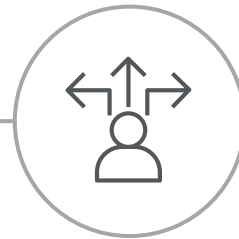
No competitive markets in bulk water supply

Conclusion

Will reform provide safe, resilient, reliable, and customer responsive water services, at least cost?



A LOT OF WORK TO DO IN THE DETAILED DESIGN



AT LEAST THREE KEY ISSUES THAT NEED TO BE ADDRESSED:

- Which councils will amalgamate?
- What are the benefits and who gets them?
- What is the right governance and legal framework?



GOVERNANCE MODEL, AND APPROPRIATE ECONOMIC REGULATION NEEDS FURTHER THOUGHT