

# New Network Tariff Designs

For Retail Electricity Markets

## **PRESENTED TO**

The Center for Research into Regulated Industries (CRRI)  
Western Conference

## **PRESENTED BY**

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28 June 2018



THE **Brattle** GROUP

# In Europe, Australia and New Zealand, retail electric competition is the norm for mass market customers

## Most US states do not have full electric retail competition

- Only 13 states (and D.C.)

## In states with full retail choice most load is served by Retail Energy Providers (REPs)

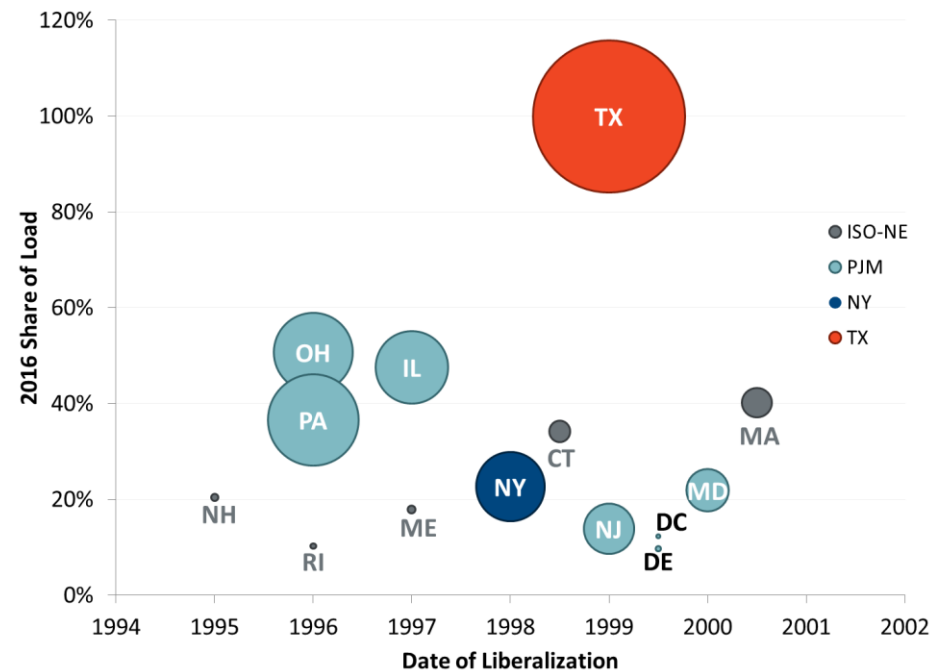
- 50% to 75% of total eligible load

## But most customers are not served by REPs

- Only 10 to 50% of residential load is served by REPs
- Whereas 65 to 90% Commercial and Industrial (C&I) load is served by REPs

**In Texas there is no default provider, so REPs serve 100% of both residential and C&I load**

REP Share of Addressable Residential Load



**Notes:**

[1]: Partial competition states are not included.

[2]: Diameter of circles reflects number of "addressable" customers in 2016.

# Retail choice is facing increased scrutiny from regulators in the US

**A few state attorneys general have taken the position that retail choice is harming residential customers and recommended ending REP service to these customers**

## Massachusetts

In March 2018 the AG published a report it sponsored which criticizes retail choice and recommends eliminating REP service to all residential customers

## New York

The retail choice market has been under review since 2012.

REPS were restricted from serving low income customers in December 2016. Ongoing case by NY AG looking to restrict REP service to all residential customers

## And abroad...

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### United Kingdom

- Competition Market Authority investigation into retail market competitiveness in 2014
- Some retail prices were re-regulated in 2017
- Legislation to impose temporary regulation on all retail prices in 2018

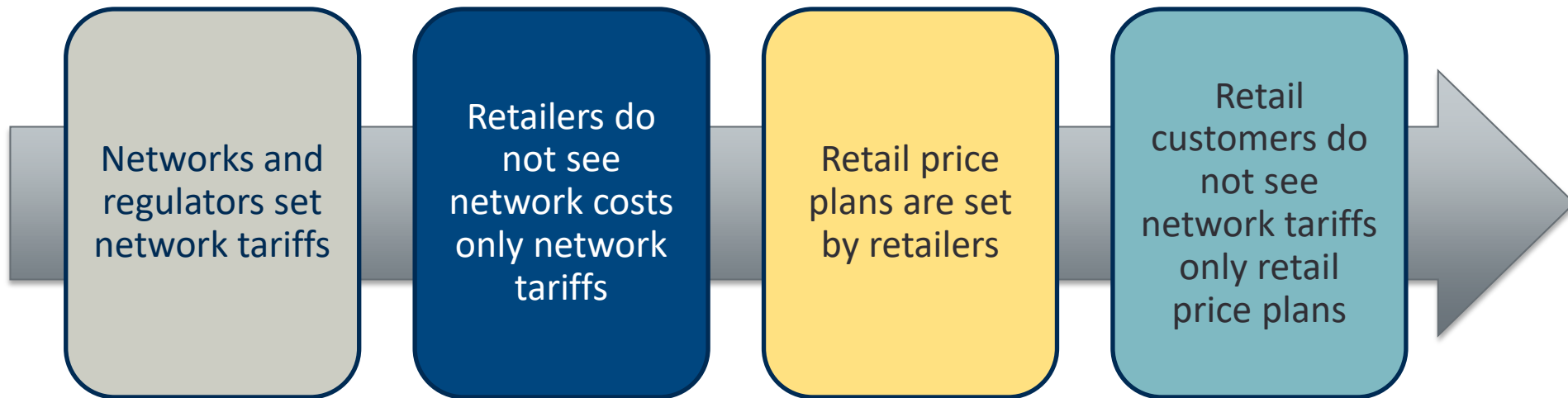
### Australia

- Recent reforms to address “confusing” retailer discounts (AEMC)
- Currently ongoing retail competition review lead by the Australian Competition and Consumer Commission (ACCC)
- Review of Victorian Market in 2017

### New Zealand

- Currently ongoing review into retail competition lead by the New Zealand Commerce Commission

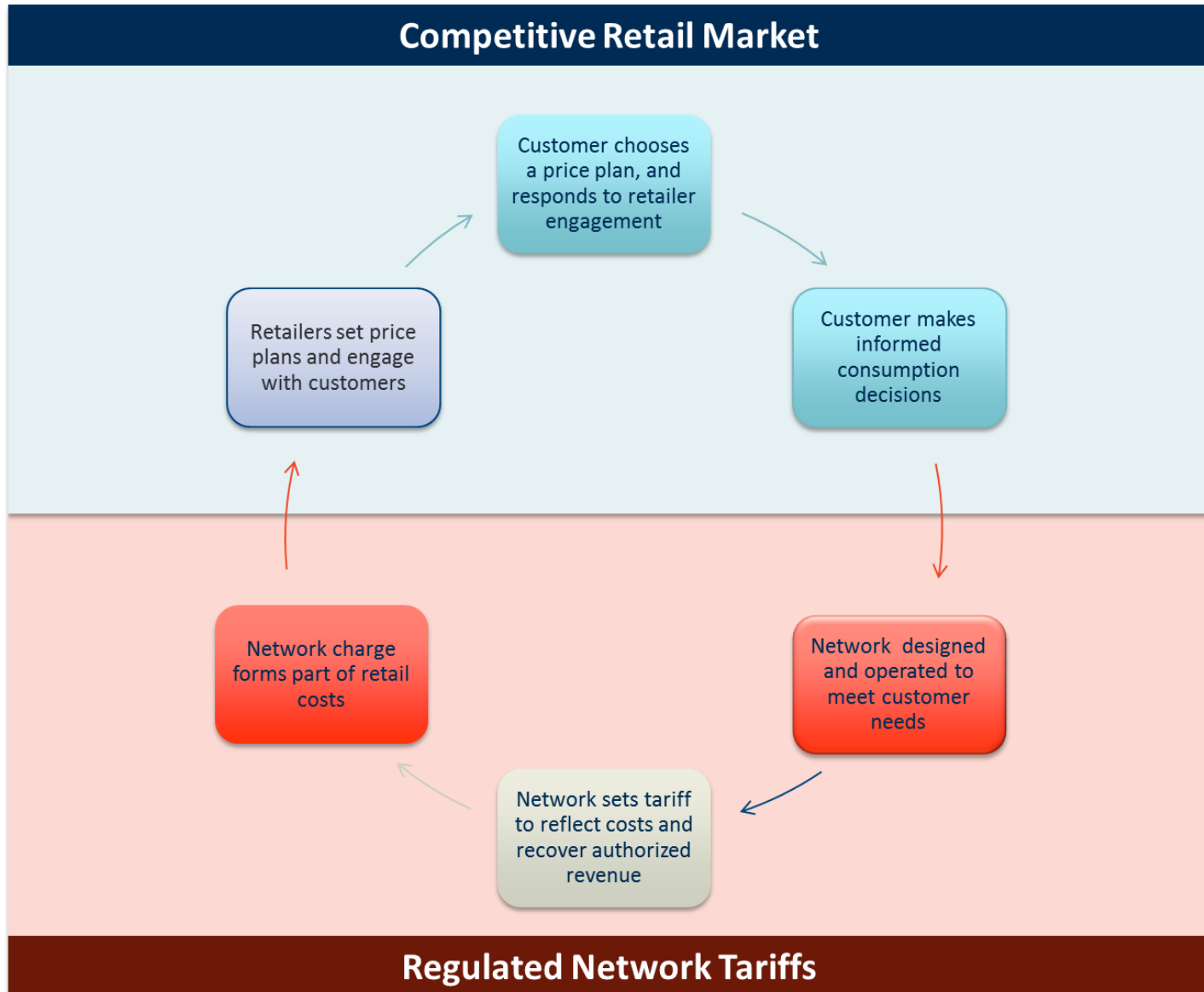
# In retail electricity markets, regulators do not set the bundled price customers pay, or determine its structure



## Regulators only set network tariffs, but not retail prices

- Only retailers see network tariffs
- The structure of the retail prices that customers pay will influence their behaviours and therefore the network costs

# Information flows between market players will ultimately impact system costs



# Default distribution tariffs tend to be variable charges coupled with a small fixed charge

Default Residential Rate Structure	Country	State/Region	Retail Competition	Locational Variation Rate	Fixed Charge	Variable Component					Demand Component	
						Has a Variable Charge	Tiered	Increasing Tiers	TOU	Seasonal	Has a Demand Charge	Has a Capacity Charge
			[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
AusNet Services	Australia	Victoria	X		X	X	X	X				
Jemena	Australia	Victoria	X		X	X						
Citipower	Australia	Victoria	X		X	X						
Powercor	Australia	Victoria	X		X	X						
United Energy	Australia	Victoria	X		X	X				X		
ATCO	Canada	Alberta	X		X	X						
Fortis Alberta	Canada	Alberta	X		X	X						
Hydro One	Canada	Ontario	X	X	X	X						
Enedis	France	Mainland	X		X	X			X	X		X
Northern Powergrid	UK	North East	X	X	X	X						
Western Power	UK	South West	X	X	X	X						
ConEd	US	NY	X			X	X	X		X		
PG&E	US	CA	CCA	X		X	X	X		X		
National Grid, NY	US	NY	X		X	X						
Arizona Public Service	US	AZ				X						
Salt River Project	US	AZ			X	X	X	X		X		
NSTAR	US	MA	X	X	X	X						
ComEd	US	IL	X		X	X						
Consumers Energy	US	MI	X		X	X						
Oncor	US	TX	X		X	X						
Energex	Australia	Queensland	X		X	X						
Evoenergy	Australia	ACT	X		X	X					X	
Vector	New Zealand	Auckland	X		X	X						
Total	23 distribution utilities		21	5	20	23	4	4	1	5	1	1

# Tariff reform is occurring around the world

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**Variable charges do not reflect system costs**

**Smart meters enable new ways of charging customers**

- Tariffs traditionally used for larger commercial/industrial customers now feasible for households

**Usage behaviour is becoming more diverse**

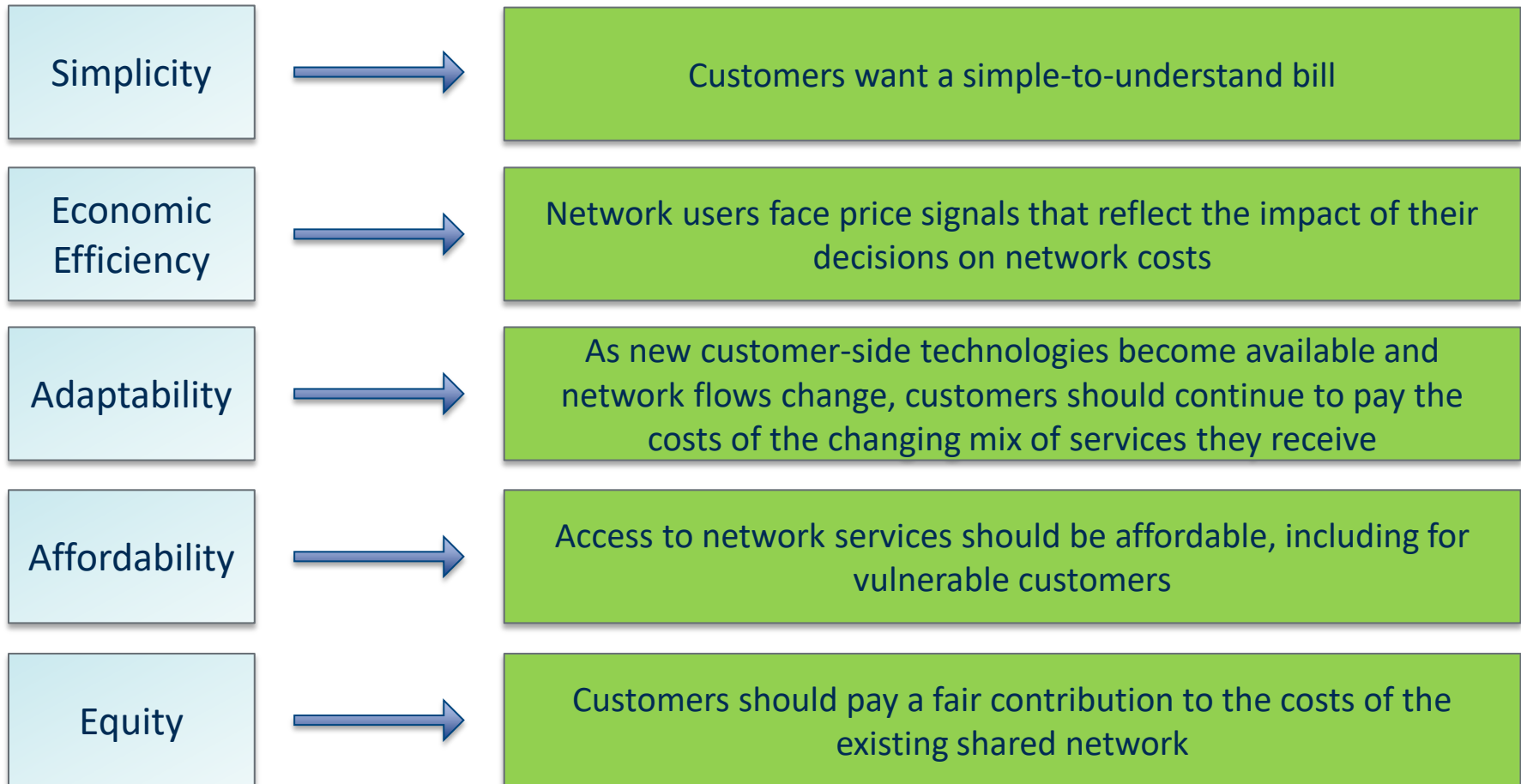
- Distributed energy resources
- Energy efficiency
- Changing tastes and behaviours

**Trend puts greater weight on demand charges and fixed charges**

**However, most experience comes from vertically-integrated utilities and/or networks that charge end-customers directly**



# Tariff objectives are similar across jurisdictions with and without retail competition



**But the challenge is different when regulators set network tariffs, but not retail prices**

# How can the marriage of network tariff reform and retail competition be happy one?

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**We propose designing tariffs that are focused on retailers, not customers**

- Movement towards cost-reflective tariffs is potentially unpopular
  - Both winners and losers

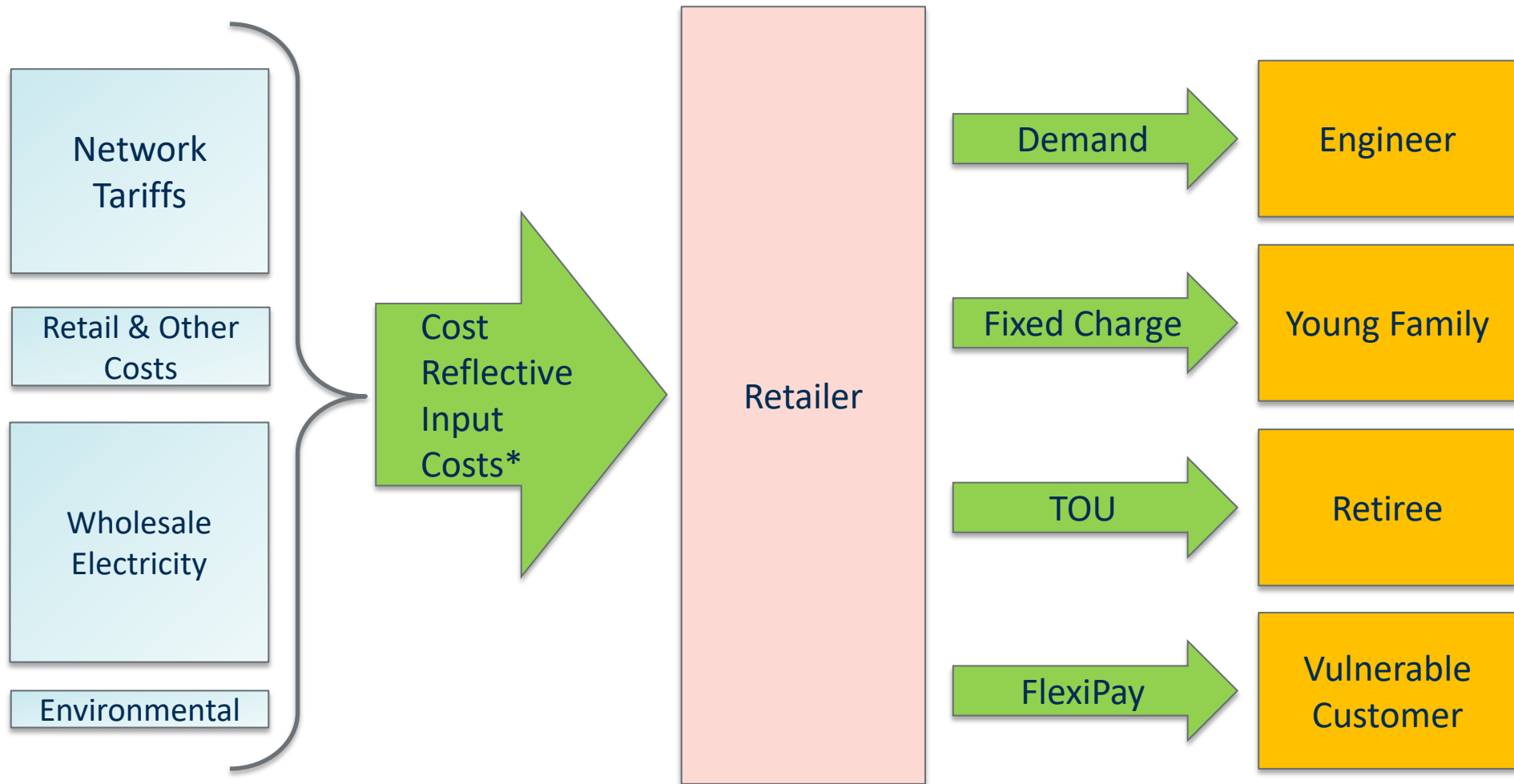
**Tariffs focused on retailers can be fully cost-reflective**

- Complexity is not an issue

**Retailers are experts in designing prices that customers like**

- There are many simple tariffs that are more cost-reflective
  - E.g. free nights and weekends

# Tariffs aimed at retailers are better able to achieve simplicity for customers, while better reflecting costs



\* Retailer input costs are the cost shares for Victoria for 2017/18 derived from the AEMC 2017 Residential Electricity Price Trends (December 2017) : 38% networks, 44% wholesale electricity, 13% retail and other costs (including retail margin) and 5% environmental.

# Network tariff reform can promote retail competition and increase affordability

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**Network charge is a cost like other retailer costs**

**Retailers design a range of price plans to appeal to different customers**

- Retailers use bills and other communication routes to inform customers
- Retail price plans can adapt quickly

**Retailers can compete over a larger “value stack”**

- Increased “headroom” between current retail price and cost-to-serve
- Opportunity for retailers to undercut rivals / gain market share
- Success for retailers that can
  - Identify low-cost customers
  - Present customers with information and choices to adapt consumption

**Relies on effective competition to deliver objectives**

- Network tariff can encourage competition

**Smart meters are necessary**

***"Happy families are all alike; every unhappy family is unhappy in its own way."***

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**For a marriage to be happy it needs to succeed in multiple dimensions, each unique to the couple**

**Network tariff design in competitive retail markets should play to the relative strengths of retailers and networks**

- Networks are experts in planning and managing their network infrastructure and data
- Retailers are experts in managing the customer relationship and have better knowledge of other input costs

**Cost reflective network prices + retail competition can reduce overall network costs**

- Networks can enhance retail competition

# Appendix

# Tariff reform takes many forms

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- **Customer charges/fixed charges**
  - Common component of most bills, but typically modest in size
  - In Ontario, Canada, the entire distribution charge is fixed
- **Time-of-use (TOU)**
  - The most common form of time-varying charge, with high peak price and lower off-peak price applied on a predictable, daily basis.
    - California is transitioning to default TOU for its regulated (vertically integrated) utilities
    - All customers in Italy and Ontario are on default TOU (for the energy component only in Ontario)
- **Critical peak pricing (CPP)**
  - High prices when the grid is constrained (critical peak events), low prices in all other hours.
    - France has had opt-in CPP since 1996—about 400,000 customers
- **Demand subscription service (DSS)**
  - Customers select a demand level from a menu. If customers deviate from their subscribed demand level, they will pay a pre-determined price for every extra unit of consumption.
    - Currently being contemplated in QLD
    - Similar to capacity charges, which are common in Europe
- **Demand charges**
  - Either peak demand or maximum demand over a specified time period
  - Opt-in demand in Victoria (retailers choose)
  - Default for new customers in the ACT


# Networks and retailers can both contribute to achieving objectives

Objective	Network Role	Retailer Role
<b>Simplicity</b>	Ensure tariffs are clear to retailers and assist retailers in transition	Design a menu of plans that appeal to customers
<b>Economic efficiency</b>	Tariff reflects incremental network costs	Competition drives efficiency
<b>Adaptable</b>	Monitor new network uses and ensure tariff continues to reflect incremental costs	Innovate and respond to new technology
<b>Affordable</b>	Network costs controlled in response to revenue cap	Create “no frills” price options
<b>Equitable</b>	Tariff treats all like users alike	General and energy-specific consumer safeguards



# Tariffs aimed at retailers are better able to achieve simplicity for customers

Tariff Objective	Network Tariffs for End-Customers			Network Tariffs for Retailers		
	TOU	Demand Subscription Service	Fixed Charge	CPP and Customer-count Charge	Demand and Customer-count Charge	Demand and Customer-count Charge + Assist Vulnerable Customers
Simple						
Economic Efficiency						
Adaptable						
Affordable						
Equitable						

 Strong
  Medium
  Weak

# Presenter Information

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Neil Lessem is an expert on consumer behaviour and energy markets. He has assisted clients around the world on issues such as wholesale market design, regulated tariffs and cost allocation, innovative customer and pricing programs, and policy impact measurement.

He has worked with more than 50 clients across North America, Asia-Pacific and the Middle-East. His clients include regulators, policy makers, utilities, system operators, consumer representatives, tech startups and infrastructure owners. He has published in peer-reviewed journals such as the *Journal of Economics and Environmental Management* and *Business and Society*; and trade journals such as *The Electricity Journal* and the *Public Utilities Fortnightly*. He has presented on pressing energy topics to audiences in Brazil, Hong Kong, the United States, Canada, Malaysia and Hong Kong. In his graduate studies, Neil Lessem conducted extensive research examining consumer adoption of environmentally-friendly products and conservation behaviors, utilizing both field experiments and utility data.

He holds a Ph.D. and M.A. in Economics from the University of California, Los Angeles and an honours degree in Business, Economics and History from the University of Cape Town.

The views expressed in this presentation are strictly those of the presenter(s) and do not necessarily state or reflect the views of The Brattle Group.

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**Dr. Toby Brown** specialises in the regulation and economics of the gas and electricity sectors. He has more than 15 years' experience consulting for utilities, producers, pipelines and regulators in Australia, New Zealand, Europe, the United States and Canada.

His project experience at Brattle includes analysing business risk in pipeline rate cases, assessing the economic impacts of alternative regulatory frameworks and competitive structures in the energy sector, and advising on regulatory best practices based on experience in different jurisdictions worldwide.

Dr. Brown heads Brattle's Sydney office. Prior to joining Brattle he worked at the UK energy regulator, Ofgem. He holds a D.Phil. in chemistry from the University of Oxford.

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