



Economic Regulation Authority

2022 Gas Instrument Review

Focused Consultation

27 April 2022



agenda

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Equity Beta

03
Market Risk Premium

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Closing



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01

Introduction

Introduction

Context of today's session

- 2022 gas rate of return instrument review - Discussion paper (Discussion Paper) published December 2021
- A range of submissions and evidence provided during 2022

Submissions to the Discussion Paper | Expert Evidence

- ERA now targeting specific questions and conducting focused consultation
- Written submissions requested by 9 May 2022

Format and housekeeping matters



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02

Equity Beta

Equity Beta

The ERA's working view on equity beta was that it may be useful to consider a range of domestic and international energy network comparators

Stakeholders have requested additional detail which will be provided today



Equity beta matters

A

Selection of comparators

B

Estimation methodology

C

Implementation for the gas instrument



Selection

From the Discussion Paper

Industry: listed gas and electricity networks/utilities

Country: countries with similar regulatory, institutional and legal frameworks

Market: sufficiently large, liquid and informationally efficient

Data availability: majority of observations available within the estimation window from Bloomberg, check for M&A



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Discussion

1. Are there any additional jurisdictions that should be considered by the ERA?
2. Are there any additional selection criterion that should be considered by the ERA?

A

B

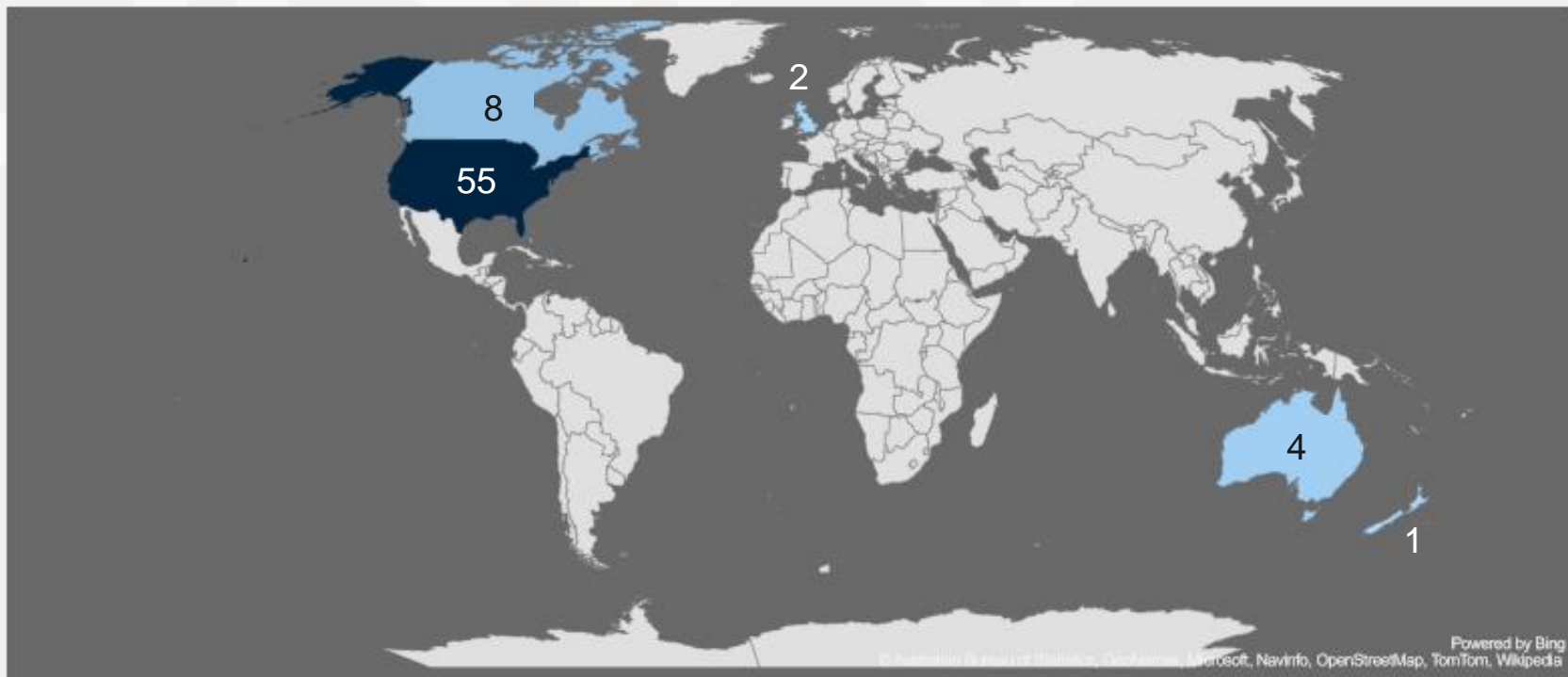
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Domestic and International Comparators

A

B

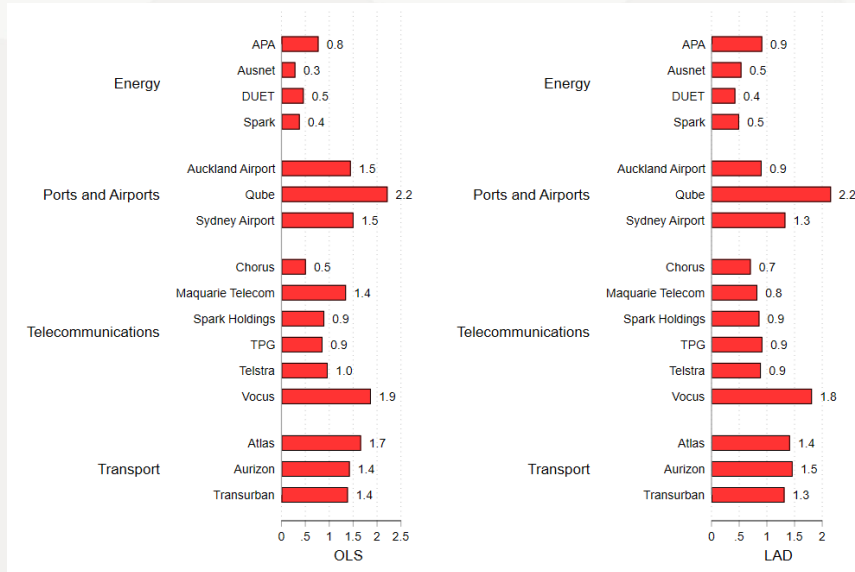
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Aside: Domestic Infrastructure

OLS and LAD estimates for domestic infrastructure



ERA estimated equity betas for 3 infrastructure industries:

- Ports and Airports
- Telecommunications
- Transport

Results do not appear useful for the estimation of energy network equity beta



International comparators

A

B

C

Ticker	Company Name
Canada	
ACO/XCN Equity	ATCO LTD -CLASS I
ALA CN Equity	ALTAGAS LTD
AQN CN Equity	ALGONQUIN POWER & UTILITIES
CU CN Equity	CANADIAN UTILITIES LTD-A
EMA CN Equity	EMERA INC
FTS CN Equity	FORTIS INC
H CN Equity	HYDRO ONE LTD
SPB CN Equity	SUPERIOR PLUS CORP
United Kingdom	
NG/ LN Equity	NATIONAL GRID PLC
SSE LN Equity	SSE PLC
New Zealand	
VCT NZ Equity	VECTOR LTD

Discussion

1. Are the firms selected by the ERA in the discussion paper appropriate? If there are firms which are inappropriate, what characteristics make them inappropriate?
2. Are there any additional jurisdictions that should be considered by the ERA?



International comparators (cont...)

A

B

Ticker		Company Name	
United States			
AEE	AMEREN CORPORATION		
AEP	AMERICAN ELECTRIC POWER		
AES	AES CORP		
AGR	AVANGRID INC		
ALE	ALLETE INC		
ATO	ATMOS ENERGY CORP		
AVA	AVISTA CORP		
BKH	BLACK HILLS CORP		
CMS	CMS ENERGY CORP		
CNP	CENTERPOINT ENERGY INC		
CPK	CHESAPEAKE UTILITIES CORP		
D	DOMINION ENERGY INC		
DTE	DTE ENERGY COMPANY		
DUK	DUKE ENERGY CORP		
ED	CONSOLIDATED EDISON INC		
EIX	EDISON INTERNATIONAL		
ENB	ENBRIDGE INC		
ES	EVERSOURCE ENERGY		

Ticker		Company Name	
United States			
ETR	ENERGY CORP		
EVRG	EVERGY INC		
EXC	EXELON CORP		
FE	FIRSTENERGY CORP		
HE	HAWAIIAN ELECTRIC INDS		
IDA	IDACORP INC		
KMI	KINDER MORGAN INC		
LNT	ALLIANT ENERGY CORP		
MGEE	MGE ENERGY INC		
NEE	NEXTERA ENERGY INC		
NFG	NATIONAL FUEL GAS CO		
NI	NISOURCE INC		
NJR	NEW JERSEY RESOURCES CORP		
NWE	NORTHWESTERN CORP		
NWN	NORTHWEST NATURAL HOLDCO		
OGE	OGE ENERGY CORP		
OGS	ONE GAS INC		
OKE	ONEOK INC		

Ticker		Company Name	
United States			
OTTR	OTTER TAIL CORP		
PCG	P G & E CORP		
PEG	PUBLIC SERVICE ENTERPRISE GP		
PNM	PNM RESOURCES INC		
PNW	PINNACLE WEST CAPITAL		
POR	PORTLAND GENERAL ELECTRIC CO		
PPL	PPL CORP		
RGCO	RGC RESOURCES INC		
SJI	SOUTH JERSEY INDUSTRIES		
SO	SOUTHERN CO/THE		
SPH	SUBURBAN PROPANE PARTNERS		
SR	SPIRE INC		
SRE	SEMPRA ENERGY		
SWX	SOUTHWEST GAS HOLDINGS INC		
TCP	TC PIPELINES LP		
UGI	UGI CORP		
UTL	UNITIL CORP		
WEC	WEC ENERGY GROUP INC		
XEL	XCEL ENERGY INC		



Methodology

Consistent with prior practice

Asset Pricing Model: A domestic CAPM model for each country to estimate the equity beta

Estimation window: 5 year

Estimator: OLS and LAD

Gearing: Equity betas are unlevered and re-levered to benchmark gearing

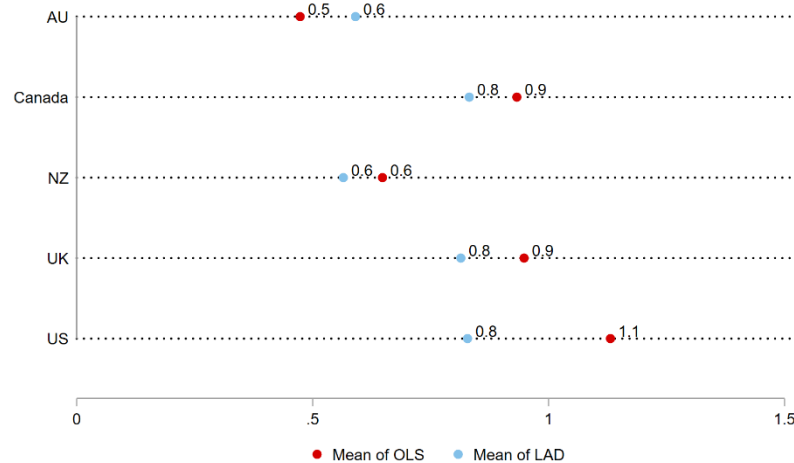
Discussion

3. Should the ERA consider reweighting foreign market indices to be reflective of the ASX, or would this create distortions and interpretation issues as the market beta would no longer be 1?
4. What adjustments, if any, should be made to estimates of international equity betas?

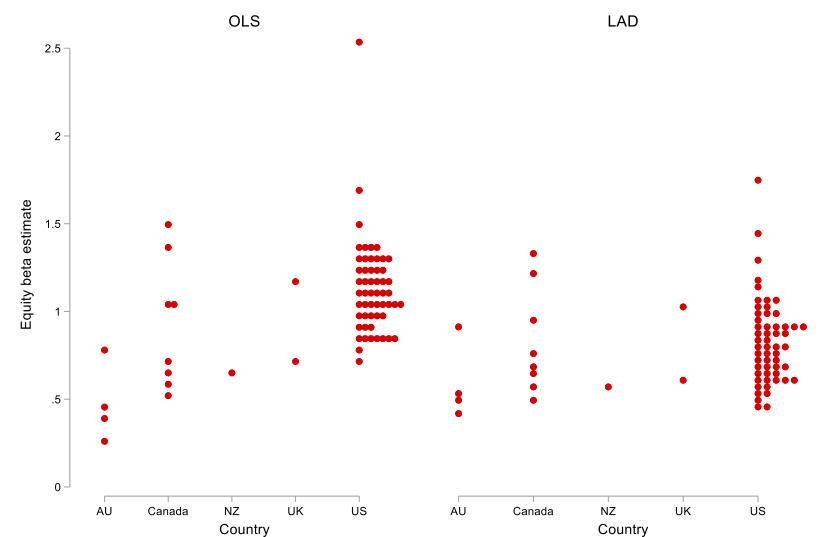


Summary of the estimates

Mean of OLS and LAD estimates by country



Distribution of OLS and LAD estimates by country



Implementation for the gas instrument

A

B

C

Discussion

5. Once the sample has been selected and individual betas have been estimated, how should the ERA best use this information to determine an equity beta point estimate?

Option 1

Establish a mechanical or formulaic way for combining beta estimates to develop an equity beta point estimate

Option 2

Assess the available information, including international betas, and use its regulatory discretion to develop the best equity beta estimate



Option 1

A

B

C

Option 1

Establish a mechanical or formulaic way for combining beta estimates to develop an equity beta point estimate

A) Full pooling

Combining all estimates and equally weighting them

OLS (LAD) β of 1.1 (0.8)

B) Country pooling

Separating estimates by country, estimating country means that are then equally weighted

OLS (LAD) β of 0.8 (0.7)

C) Domestic anchoring

Putting more weight on domestic estimates as an anchor, which is then modified by lower weightings on international estimates (either individually or by country)

β of 0.5-0.8



Regulatory equity beta



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Option 2

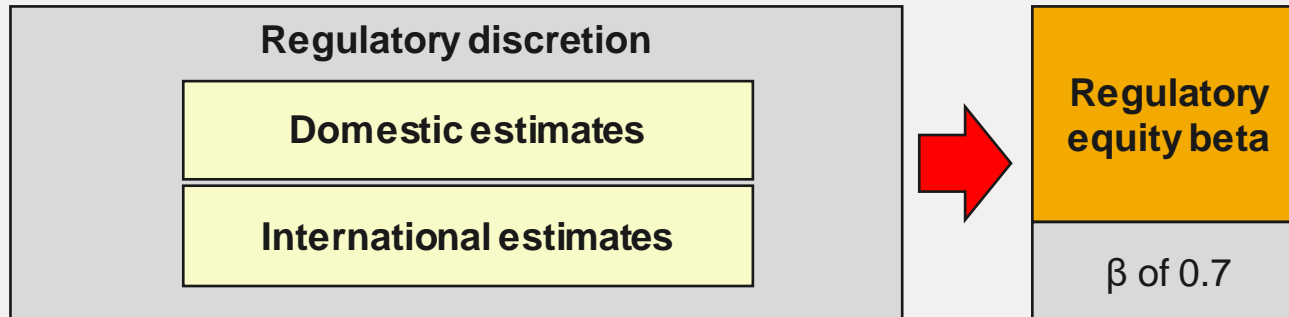
A

B

C

Option 2

Assess the available information, including international betas, and use its regulatory discretion to develop the best equity beta estimate



Implementation for the gas instrument

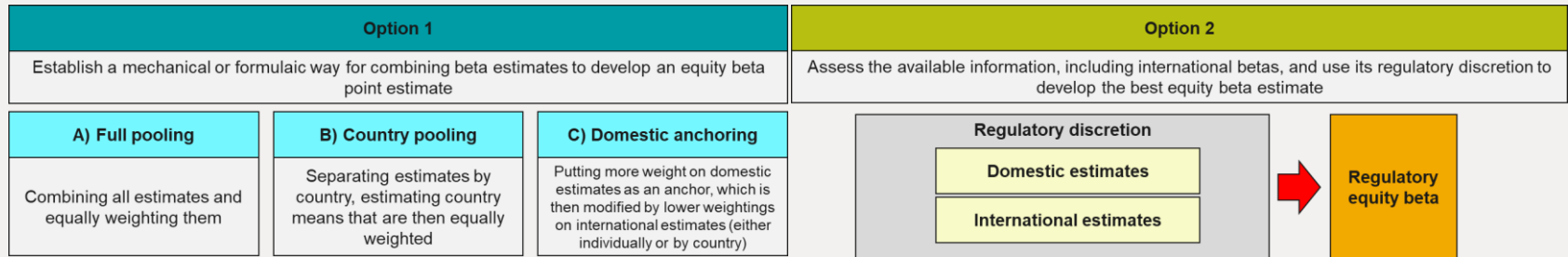
A

B

C

Discussion

5. Once the sample has been selected and individual betas have been estimated, how should the ERA best use this information to determine an equity beta point estimate?



The ERA welcomes stakeholders to present views on possible options



Presentations

- **Australian Gas Infrastructure Group:** Nick Wills-Johnson
- **Consumer Reference Group:** Dr John Fallon



Q&A on equity beta

Moderator: Jason Dignard



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03

Market Risk Premium

Market risk premium – current approach

- The ERA is reviewing its current approach to estimating the MRP
- The current approach:
 - Places more reliance on the historic market risk premium, relative to the dividend growth model
 - Determines a final point estimate of the market risk premium by using regulatory judgement, including considering conditioning variables
 - Fixes the MRP for the life of the gas instrument



Market risk premium matters

A

ENA's / Frontier Economics calibrated DGM

B

Construction of the expected MRP

C

The Gas Instrument and the variability of the MRP



ENA's / Frontier Economics calibrated DGM

A

B

C

Discussion

6. What are stakeholder views on the calibrated DGM proposed by Energy Networks Australia? Does this amended model provide additional confidence in the DGM and how?

- The ERA has had concerns about the use of the DGM due to its:
 - input assumptions
 - sensitivity to assumptions
 - upward bias
- The ENA/Frontier has developed a calibrated DGM which it views addresses some of these concerns. The ENA/Frontier will present additional information

The ERA welcomes stakeholders' views on the benefits and issues related to the calibrated DGM



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Construction of the MRP

A

B

C

The ERA is considering how the estimate of the MRP can be constructed using inputs

Discussion

7. Is it possible to combine inputs in a more formulaic manner when estimating a forward-looking market risk premium?
8. What weight, if any, should be assigned to the historic market risk premium, DGM and conditioning variables in estimating the market risk premium?

Option 1

MRP is calculated in a mechanical or formulaic way to develop a market risk premium point estimate

Option 2

Assess the available information and use its regulatory discretion to develop the best market risk premium estimate



Option 1

A

B

C

Option 1 - Mechanical

MRP is calculated in a mechanical or formulaic way to develop a market risk premium point estimate

A) Equally weighted

Combining the historical market risk premium estimates with the DGM estimates using equal weights

Historical MRP of 5.8% and DGM of 8.1% = 7% MRP

B) Merit weighted

Combining the historical market risk premium estimates with the DGM estimates using weights that reflect the relative merit of these different estimates

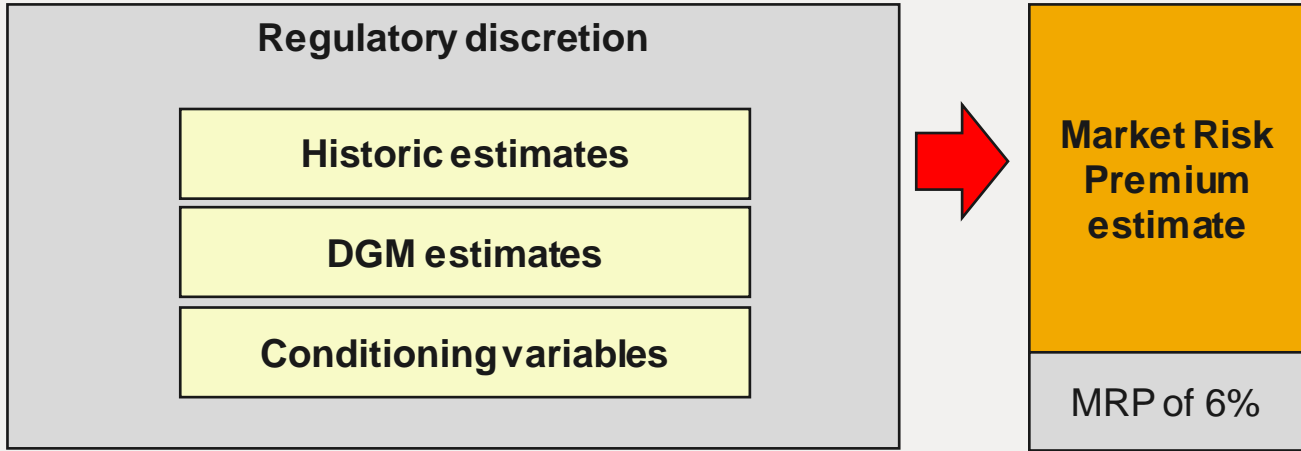
MRP range of 5.8-7.0%



Option 2

Option 2 – Regulatory discretion

Assess the available information and use its regulatory discretion to develop the best market risk premium estimate



Construction of the MRP

A

B

C

Discussion

7. Is it possible to combine inputs in a more formulaic manner when estimating a forward-looking market risk premium?
8. What weight, if any, should be assigned to the historic market risk premium, DGM and conditioning variables in estimating the market risk premium?

Option 1 - Mechanical

MRP is calculated in a mechanical or formulaic way to develop a market risk premium point estimate

A) Equally weighted

Combining the historical market risk premium estimates with the DGM estimates using equal weights

B) Merit weighted

Combining the historical market risk premium estimates with the DGM estimates using weights that reflect the relative merit of these different estimates

Regulatory discretion

Historic estimates

DGM estimates

Conditioning variables



Market Risk Premium estimate

MRP of 6%

The ERA welcomes stakeholders to present views on possible options



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Variability of the MRP

A

B

C

The ERA is considering whether the MRP should remain fixed

Discussion

9. Do you support a fixed or flexible market risk premium being used over the four year term of the gas instrument?
10. Is it possible to estimate a forward market risk premium in a completely mechanical way with no use of regulatory discretion?

Option 1

MRP is calculated at the time of the final gas instrument and remains fixed for the four year life of the gas instrument

Option 2

MRP is updated (re-estimated) at the time of each access arrangement in order to reflect current market conditions, with the calculation methodology detailed in the gas instrument

The ERA welcomes stakeholders to present views on possible options



Presentations

- **Frontier Economics:** Dr Stephen Gray
- **Consumer Reference Group:** Dr John Fallon



Q&A on MRP

Moderator: Jason Dignard



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04

Closing

Questions from the consultation paper

Equity beta

1. Are the firms selected by the ERA in the discussion paper (reproduced in Appendix 1 of this paper) appropriate? If there are firms which are inappropriate, what characteristics make them inappropriate?
2. Are there any additional jurisdictions that should be considered by the ERA?
3. Should the ERA consider reweighting foreign market indices to be reflective of the Australian Securities Exchange (ASX), or would this create distortions and interpretation issues as the market beta would no longer be one?
4. What adjustments, if any, should be made to estimates of international equity betas?
5. Once the sample has been selected and individual betas have been estimated, how should the ERA best use this information to determine an equity beta point estimate? Should this be done in a mechanical way or should regulatory discretion be used?

Market risk premium

6. What are stakeholder views on the calibrated DGM proposed by Energy Networks Australia? Does this amended model provide additional confidence in the DGM and how?
7. Is it possible to combine inputs in a more formulaic manner when estimating a forward-looking market risk premium?
8. What weight, if any, should be assigned to the historic market risk premium, DGM and conditioning variables in estimating the market risk premium?
9. Do you support a fixed or updating market risk premium being used over the four-year term of the gas instrument?
10. Is it possible to estimate a forward looking market risk premium in a completely mechanical way with no use of regulatory discretion?

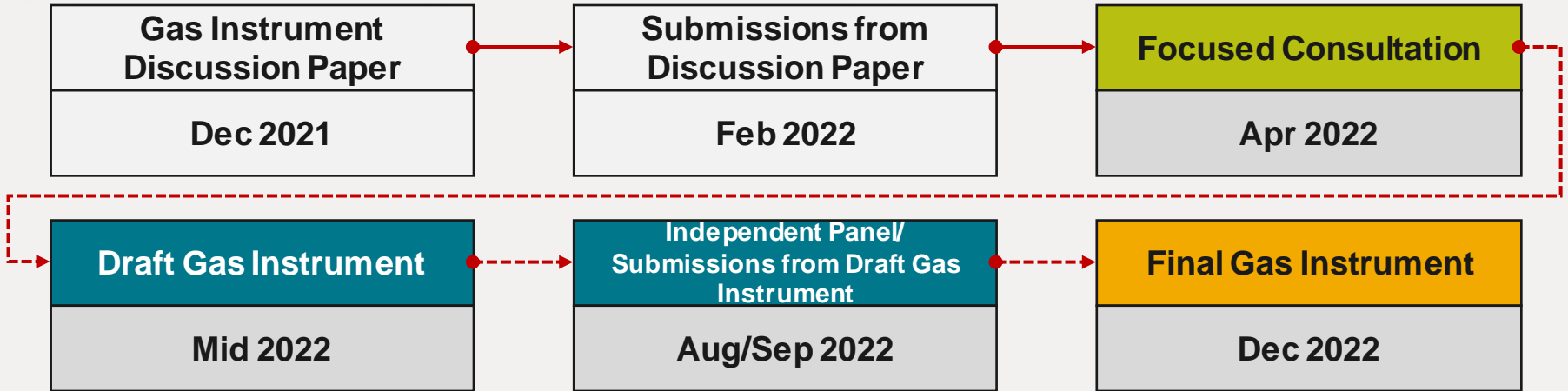
The ERA welcomes written submissions by 9 May 2022



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Next steps

Next milestone: Draft Gas Instrument and Explanatory Information



Thank you

Ask any questions



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