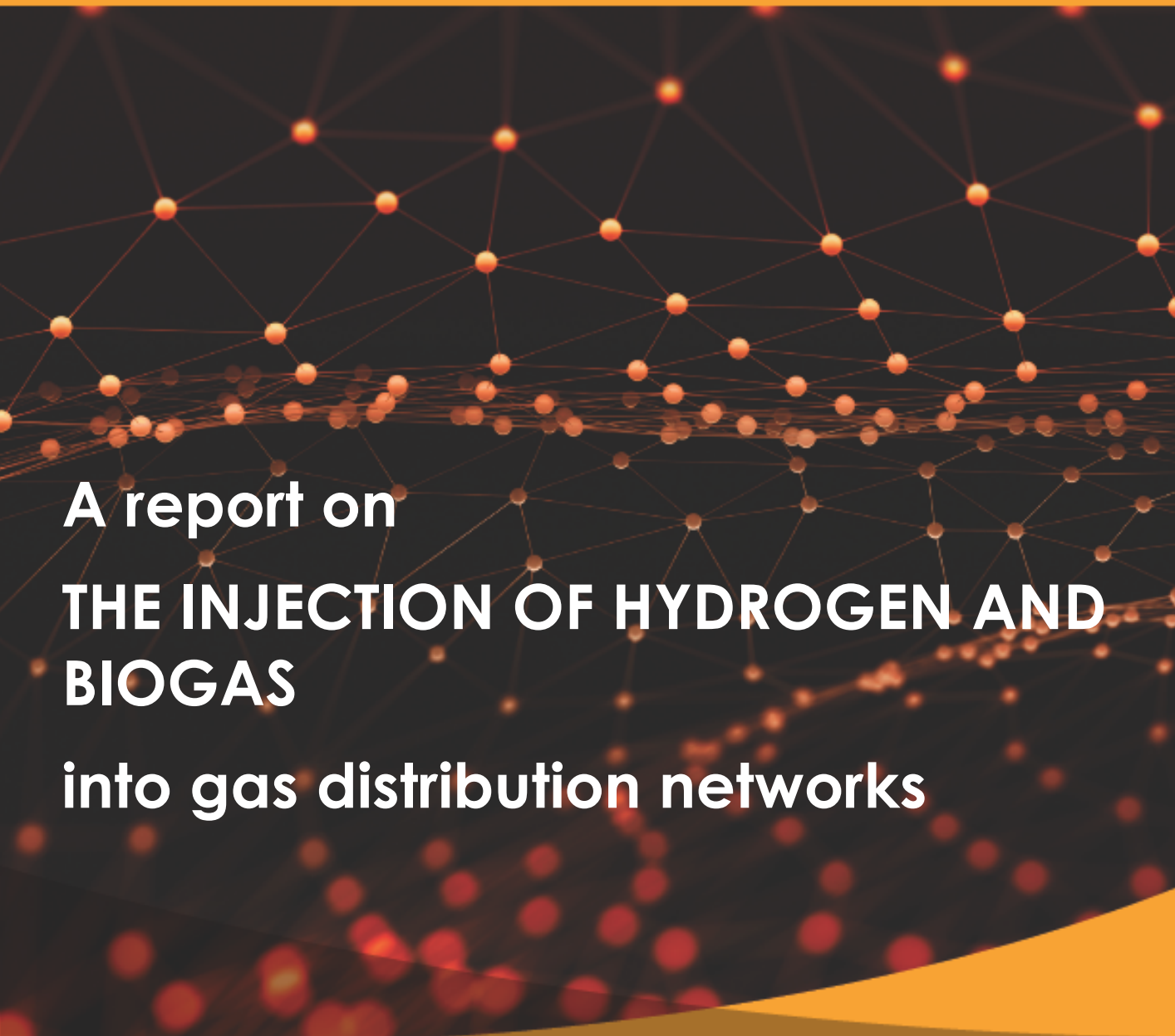


JOHNSON WINTER & SLATTERY
LAWYERS



A report on
THE INJECTION OF HYDROGEN AND
BIOGAS
into gas distribution networks

Prepared for
Energy Networks Australia

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1 Introduction

Johnson Winter & Slattery was instructed by the Energy Networks Australia to prepare this legal report which outlines whether it is permissible to inject hydrogen and/or biogas into existing gas distribution networks in each jurisdiction in Australia and, if so, to what extent.

The objective of this report is to identify any regulatory roadblocks which would prevent a gas distributor from adding hydrogen to an existing natural gas distribution network. For this purpose, we were instructed to assume compliance with the specification for general purpose natural gas (AS4564).

This report considers the situation where hydrogen is injected into a natural gas network as a supplement to natural gas.

This report also comments on the application of the legislation to a pure hydrogen network or a biogas network.

This report does not consider operational or commercial issues associated with the injection of hydrogen, such as what changes are required to the existing regulatory framework to address gas metering issues or issues associated with the cost of producing and injecting hydrogen or selling hydrogen to a gas distribution network.

This report considers the relevant gas industry legislation which is detailed in the following pages, as well as various distribution licences that were provided to us from the following jurisdictions, namely:

- Australian Capital Territory
- New South Wales
- Queensland
- South Australia
- Victoria
- Western Australia

This report does not consider the injection of hydrogen or biogas into gas transmission pipelines or any issues associated with legislation not specifically related to the gas industry, such as planning and development regulations, general safety legislation or general environmental legislation.

This report has been prepared for the Energy Networks Australia and its members. The Energy Network Australia and each of its members may rely upon this report, subject to the limitations on our liability.

Our liability is limited by a scheme approved under Professional Standards Legislation (Australia-wide except Tasmania).

In addition, the terms of our engagement letter with the Energy Networks Australia set out limitations which apply to our liability should the Energy Networks Australia, or any of its members, have reason to make a claim against us.

Any member of the Energy Networks Australia who wishes to rely on this report may do so, on the basis that, in return for reliance, they accept the limitations set out in our engagement letter.

This report is based on the legislation in force as at 16 February 2018.

2 Summary of Legislative Reviews

The tables in this Chapter provide a high-level summary of the legislative reviews for the various jurisdictions to indicate whether it is permissible or not to inject hydrogen or biogas into an existing gas distribution network.

For each legislative instrument in a jurisdiction, the tables use a coloured indicator (red, orange, or green) to indicate whether an activity is prohibited, permitted on condition or permitted.

 **Prohibited**

A red indicator means the activity is prohibited under the relevant legislative instrument.

 **Conditional**

An orange indicator means the activity is not prohibited but is permitted subject to compliance with certain conditions.

 **Permitted**

A green indicator means the activity is permitted under this legislative instrument.

The tables are a summary only and should be read in conjunction with the detailed reviews in this Report.

NATIONAL REGULATORY INSTRUMENTS

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>National Gas Law</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas Rules</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Rules</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Regulations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AUSTRALIAN CAPITAL TERRITORY

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
Gas Safety Act 2000	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gas Safety Regulation 2001	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Utilities Act 2000	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Utilities (Technical Regulation) Act 2014	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Utility Networks (Public Safety) Regulation 2001	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Energy Retail Law (ACT) Act 2012	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Energy Retail Law (ACT) Regulation 2012	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Gas (ACT) Act 2008	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Retail Market Procedures (NSW and ACT)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NEW SOUTH WALES

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>Gas Supply Act 1996</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Supply (Natural Gas Retail) Regulation 2014</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Supply (Safety and Network Management) Regulation 2013</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (Adoption) Act 2012</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (Adoption) Regulation 2013</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (New South Wales) Act 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

NORTHERN TERRITORY

	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
Page			
<i>National Gas (Northern Territory) Act 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

QUEENSLAND

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>Gas Supply Act 2003</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Supply Regulation 2007</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Distribution Network Code</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Petroleum and Gas (Production and Safety) Act 2004</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Petroleum and Gas (Production and Safety) Regulation 2004</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Petroleum and Gas (General Provisions) Regulation 2017</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (Queensland) Act 2014</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (Queensland) Regulation 2014</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (Queensland) Act 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (Queensland) Regulation 2014</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Retail Market Procedures (Queensland)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SOUTH AUSTRALIA

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>Gas Act 1997</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Regulations 2012</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Distribution Code</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (South Australia) Act 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (South Australia) Regulations</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (South Australia) Act 2011</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Energy Retail Law (Local Provisions) Regulations 2013</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Retail Market Procedures (South Australia)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

TASMANIA

	Page	Injection of hydrogen / biogas		
		Prohibited	Conditional	Permitted
Gas Act 2001		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gas (Safety) Regulations 2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tasmanian Gas Distribution Code		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Gas (Distribution System) Order 2001		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Gas (Tasmania) Act 2008		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Energy Retail Law (Tasmania) Act 2012		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Energy Retail Law (Tasmania) Regulations 2012		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
National Energy Retail Law (Tasmania) Amendment Regulations 2013		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

VICTORIA

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>Gas Industry Act 2001</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Safety Act 1997</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Safety (Gas Quality) Regulations 2007</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Safety (Gas Installation) Regulations 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Safety (Safety Case) Regulations 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas (Victoria) Act 2008</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Distribution System Code</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Retail Market Procedures (Victoria)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

WESTERN AUSTRALIA

Page	Injection of hydrogen / biogas		
	Prohibited	Conditional	Permitted
<i>Energy Coordination Act 1994</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Energy Coordination (Retail Market Schemes) Regulations 2004</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Standards Act 1972</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Standards (Gas Supply and System Safety) Regulations 2000</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Gas Supply (Gas Quality Specifications) Act 2009</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Gas Supply (Gas Quality Specifications) Regulations 2010</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas Access (WA) Act 2009</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas Access (WA) (Part 3) Regulations 2009</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>National Gas Access (WA) (Local Provisions) Regulations 2009</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Retail Market Procedures (WA)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3 Detailed Legislative Reviews

NATIONAL REGULATORY INSTRUMENTS

National Gas Law

Introduction

The *National Gas Law* is contained in a Schedule to the *National Gas (South Australia) Act 2008* (SA)¹.

The objective of the *National Gas Law* is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interest of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas².

Within the *National Gas Law*:

- Chapter 2 describes the functions and powers of various gas market regulatory entities;
- Chapter 3 provides for the coverage and classification of natural gas pipelines;
- Chapter 4 regulates the provision of covered pipeline services;
- Chapter 5 provides for greenfield pipeline incentives;
- Chapter 6 provides for the resolution of access disputes in relation to scheme pipelines;
- Chapter 6A provides for the resolution of access disputes in relation to non-scheme pipelines;
- Chapter 7 provides for the operation of the Natural Gas Services Bulletin Board;
- Chapter 8 regulates proceedings under the National Gas Law; and
- Chapter 9 provides for making the National Gas Rules.

¹ We have reviewed the version of that Act in force as at the date of this report, namely version 1.8.2017.

² *National Gas Law*, s23.

Relevant definitions

Natural gas means a substance that –

- (a) is gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption³.

Processable gas means a substance that –

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane⁴.

Is it permissible under the *National Gas Law* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas Law* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas Law* to a pure hydrogen/biogas network

There are no provisions in the *National Gas Law* which would affect the operation of a pure hydrogen or biogas network.

The *National Gas Law* will not apply to a pure hydrogen network because the *National Gas Law* regulates pipelines for the haulage of natural gas and the service providers who own, operate and control those pipelines. Pure hydrogen is not “natural gas” within the meaning of the *National Gas Law*⁵.

Similarly, the *National Gas Law* will not apply to a biogas network unless the biogas constitutes “natural gas” within the meaning of the *National Gas Law*.

³ *National Gas Law*, s2.

⁴ *National Gas Law*, s2.

⁵ *National Gas Law*, s2. Note that AEMO’s declared system functions can apply to liquefied natural gas stored by a declared LNG storage provider – see *National Gas Law*, s91B.

Other comments

If network operators wish to develop pure hydrogen networks or biogas networks, there is a question as to whether the law should be changed so that those networks are subject to the regulatory framework that applies to natural gas networks under the *National Gas Law* (or to some parts of that regulatory framework).

First, *National Gas Law* provides the legal framework for:

- (a) the wholesale gas market⁶;
- (b) the short term trading markets⁷;
- (c) the gas trading exchange⁸;
- (d) the retail gas markets⁹.

Under the *National Gas Law*, these markets are markets for natural gas and would not extend to hydrogen or biogas (except where biogas constitutes “natural gas” within the meaning of the *National Gas Law*). The law will require amendment if it is desirable for a hydrogen or biogas network to form part of a wholesale gas market, a short term trading market, a gas trading exchange or a retail gas market.

Second, the *National Gas Law* provides for coverage of pipelines for the haulage of natural gas and for regulation of the services provided by means of covered pipelines¹⁰. The regulation can be light regulation¹¹ or full regulation pursuant to a full access arrangement¹². This regulation is designed to facilitate third party access to pipeline services.

As part of the framework for third party access:

- (a) Service providers and others cannot engage in conduct for the purpose of preventing or hindering access to a pipeline service¹³.
- (b) Natural gas producers are obliged to offer a price on request for natural gas which is unbundled from the price for delivered gas¹⁴.

⁶ See *National Gas Law*, Chapter 2, Part 1, Division 2. Currently, the only wholesale gas market operates in Victoria.

⁷ See *National Gas Law*, Chapter 2, Part 1, Division 2A. Currently, there are short term trading markets in New South Wales, Queensland and South Australia.

⁸ See *National Gas Law*, Chapter 2, Part 1, Division 2B. There is currently one gas trading exchange, at Wallumbilla in Queensland.

⁹ See *National Gas Law*, Chapter 2, Part 1, Division 7. Currently, there are retail gas markets in New South Wales, Queensland, South Australia and Victoria.

¹⁰ *National Gas Law*, Chapter 3, Part 1, Part 3 and Part 4.

¹¹ *National Gas Law*, Chapter 3, Part 2.

¹² *National Gas Law*, s132.

¹³ *National Gas Law*, s133.

- (c) Service providers cannot engage in price discrimination when providing light regulation services¹⁵.
- (d) There are ring-fencing requirements designed to maintain structural and operational separation between the pipeline services business of a covered service provider and the business of producing, purchasing or selling natural gas or processable gas¹⁶.
- (e) There are procedures for the resolution of access disputes between service providers and users or prospective users in relation to one or more aspects of access to pipeline services provided by means of a scheme pipeline¹⁷.

The *National Gas Law* also regulates access to pipeline services provided by non-scheme pipelines and, as part of this regulation, requires service providers and users (or prospective users) to negotiate in good faith about whether access can be granted to a non-scheme pipeline and, if so, the terms and conditions for access¹⁸.

The regulatory framework for third party access under the *National Gas Law* relates to natural gas pipelines and would not apply to a hydrogen network or to a network which transports biogas (except where the biogas is “natural gas” within the meaning of the *National Gas Law*).

The law will require amendment if it is desirable for third party access principles to apply to hydrogen networks and to networks which transport biogas (where the biogas is not “natural gas” within the meaning of the *National Gas Law*).

Finally, the *National Gas Law* establishes the Natural Gas Services Bulletin Board. The Gas Bulletin Board (“**the GBB**”) is a gas market and system information website covering all major gas production fields, major demand centres, and national gas transmission pipeline systems of South Australia, Victoria, Tasmania, New South Wales, the Australian Capital Territory and Queensland.

The objective of the GBB is to facilitate improved decision-making and trade in gas and pipeline capacity through the provision of readily accessible and up-to-date gas system and market information.

Under the *National Gas Law*, the GBB contains information about natural gas services¹⁹. The law would require amendment if it was desirable for the GBB to also contain information about hydrogen services or information about biogas services²⁰.

¹⁴ *National Gas Law*, s134.

¹⁵ *National Gas Law*, s136.

¹⁶ *National Gas Law*, Chapter 4, Part 2.

¹⁷ *National Gas Law*, Chapter 6.

¹⁸ *National Gas Law*, Chapter 6A.

¹⁹ *National Gas Law*, s218.

²⁰ Note that this amendment is not required where biogas is “natural gas” within the meaning of the *National Gas Law*.

National Gas Rules

Introduction

The *National Gas Rules*²¹ are made pursuant to the *National Gas Law*. The *National Gas Rules* contain various detailed provisions relevant to the *National Gas Law*.

- Part 2 requires AEMO to provide information on regulatory issues;
- Part 3 regulates decision-making under the *National Gas Law*;
- Part 4 contains details about coverage applications and applications to revoke coverage;
- Part 5 regulates competitive tendering;
- Part 6 contains details about ring-fencing and approval for associate contracts;
- Part 7 deals with light regulation determinations;
- Part 8 regulates access arrangements;
- Part 9 applies to full access arrangements only and contains details about price and revenue regulation;
- Part 10 contains other provisions concerning access arrangements;
- Part 11 contains provisions designed to facilitate access to pipeline services;
- Part 12 applies to access disputes;
- Part 12A regulates gas connection for retail customers;
- Part 13 contains details about greenfield incentives;
- Part 14 allows for the reclassification of natural gas pipelines;
- Part 15 provides for a scheme register of all natural gas pipelines;
- Part 15A describes the registered participants in various gas markets and regulates registration of participants;
- Part 15B provides for the development of Procedures for the various gas markets;
- Part 15C provides a dispute resolution mechanism for disputes between eligible persons in the various gas markets;
- Part 15D details the contents of the gas statement of opportunities which contains information about natural gas;
- Part 16 regulates the disclosure of confidential information by service providers (including information about consumption of natural gas and use of pipeline services);
- Part 18 deals with the Natural Gas Services Bulletin Board;
- Part 19 contains rules applicable to the operation of the declared wholesale gas market;
- Part 20 contains rules applicable to a short term trading market;
- Part 21 specifies the retail support obligations between distributors and retailers;
- Part 22 contains rules applicable to a gas trading exchange; and
- Part 23 regulates access to non-scheme pipelines.

²¹ *National Gas Rules*, version 36, current as at 1 November 2017.

Relevant definitions

None

Is it permissible under the *National Gas Rules* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas Rules* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas Rules* to a pure hydrogen/biogas network

There are no provisions in the *National Gas Rules* which would affect the operation of a pure hydrogen or biogas network.

Parts 4 to 14 of the *National Gas Rules* relate to third party access under the *National Gas Law*. The third party access provisions relate to natural gas pipelines and would not apply to a hydrogen network or to a network which contains biogas (except where the biogas is “natural gas” within the meaning of the *National Gas Law*).

Parts 15 to 20 of the *National Gas Rules* relate to the various gas markets established under the *National Gas Law*. These markets are natural gas markets so these Parts of the *National Gas Law* are not relevant to hydrogen networks or to networks which contain biogas (except where the biogas is “natural gas” within the meaning of the *National Gas Law*).

Part 21 of the *National Gas Rules* contains retail support obligations between distributors and retailer. Part 21 applies to distributors who own, operate or control a distribution pipeline for the haulage of natural gas²². Part 21 would not apply to a hydrogen network or to a network which contained biogas (unless the biogas constituted “natural gas” within the meaning of the *National Gas Law*).

Part 23 of the *National Gas Rules* relates to third party access to natural gas pipelines which are non-scheme pipelines. Part 23 would not apply to a hydrogen network or to a network which contains biogas (except where the biogas is “natural gas” within the meaning of the *National Gas Law*).

²² *National Gas Rules*, rules 501, 502 and 513 and note the definition of “distribution pipeline” under the *National Gas Law*.

Other comments

Part 20 of the *National Gas Rules* sets out the rules applicable to short term trading markets. The short term trading markets are markets in New South Wales, Queensland and South Australia in which natural gas is supplied at hubs in Sydney, Brisbane and Adelaide²³.

Part 20 currently contemplates that:

- (a) natural gas is supplied to hubs and withdrawn from hubs at custody transfer points²⁴;
- (b) bids and offers are submitted to supply natural gas and withdraw natural gas at the hubs²⁵; and
- (c) title to natural gas transfers at each custody transfer point from the Trading Participants who are taken to have supplied natural gas to the Trading Participants who are taken to have withdrawn natural gas²⁶.

Part 20 does not currently contemplate that hydrogen might be supplied to a hub or into the distribution system which receives gas at the hub²⁷.

If it is proposed to inject hydrogen into an STTM distribution system, then it might be desirable to modify Part 20 of the *National Gas Rules* to contemplate the injection of hydrogen²⁸.

²³ See the definition of “short term trading market” (“STTM”) in rule 364, *National Gas Rules*.

²⁴ A custody transfer point is “... a point at which natural gas passes from a pipeline, storage facility of production facility to an STTM distribution system” (see *National Gas Rules*, rule 364). This would not include a point at which hydrogen passes into an STTM distribution system or a point at which biogas passes into an STTM distribution system (unless the biogas is “natural gas” within the meaning of the *National Gas Law*).

²⁵ An ex ante bid is “...a bid submitted by an STTM Shipper or STTM User for a hub to withdraw quantities of natural gas from that hub ...” and an ex ante offer is “... an offer submitted by an STTM Shipper for a hub to supply natural gas to that hub ...” (see *National Gas Rules*, rule 364).

²⁶ *National Gas Rules*, rule 418.

²⁷ Each hub has an associated STTM distribution system. In the case of the Sydney hub, the STTM distribution system comprises the Wilton-Newcastle Network Section and the Wilton Wollongong Network Section (see rule 372). In the case of the Brisbane hub, the STTM distribution system comprises the distribution systems for Brisbane North distribution area, the Ipswich distribution area and the South East Queensland distribution area, as well as a deemed distribution system under rule 372A(3) (see rule 372A). In the case of the Adelaide hub, the STTM distribution system comprises the Adelaide metro sub-network identified by gas zone code 2101 in the Retail Market Procedures for South Australia (see rule 371).

²⁸ The *National Gas Rules* define an “STTM production facility” as “... a facility at which natural gas is produced for injection directly from that facility into an STTM distribution system at a custody transfer point in a hub (see rule 364). Note that this concept would not include a facility which produces pure hydrogen or a facility which produces biogas (unless the biogas constituted “natural gas” within the meaning of the *National Gas Law*).

If it is proposed to inject biogas into an STTM distribution system and the biogas is not “natural gas” within the meaning of the *National Gas Law*, then it might be desirable to modify Part 20 of the *National Gas Rules* to contemplate the injection of biogas²⁹.

Similar comments apply in respect of Part 23 of the *National Gas Rules*. Part 23 applies to pipelines for the haulage of natural gas which are non-scheme pipelines under the *National Gas Law*. It contains rules for third party access to those pipelines. Some of those rules do not contemplate that something other than natural gas might be injected into a non-scheme pipeline³⁰.

If it is proposed to inject hydrogen into a non-scheme pipeline, then it might be desirable to modify Part 23 to contemplate the injection of hydrogen.

If it is proposed to inject biogas into a non-scheme pipeline and the biogas is not “natural gas” within the meaning of the *National Gas Law*, then it might be desirable to modify Part 23 to contemplate the injection of biogas.

²⁹ The *National Gas Rules* define an “STTM production facility” as “... a facility at which natural gas is produced for injection directly from that facility into an STTM distribution system at a custody transfer point in a hub (see rule 364). Note that this concept would not include a facility which produces pure hydrogen. It would also not include a facility which produces biogas (unless the biogas constituted “natural gas” within the meaning of the *National Gas Law*).

³⁰ See, for example, rule 553(4) which defines the service and usage information that has to be published in respect of a non-scheme pipeline. The service and usage information comprises information about the quantities of natural gas which are injected into, or withdrawn, from a pipeline or which are scheduled for injection into, or withdrawal from, a pipeline. The rule does not contemplate that quantities of hydrogen or biogas might be injected into a pipeline.

National Energy Retail Law

Introduction

The *National Energy Retail Law* is contained in a Schedule to the *National Energy Retail Law (South Australia) Act 2011 (SA)*³¹.

The *National Energy Retail Law* establishes a national energy customer framework for the regulation of the retail supply of energy to customers; and makes provision for the relationship between the distributors of energy and the consumers of energy (among other things).

The objective of the *National Energy Retail Law* is to promote efficient investment in, and efficient operation and use of, energy services for the long term interests of consumers of energy with respect to price, quality, safety, reliability and security of energy supply³².

- Part 2 applies to the relationship between retailers and customers³³.
- Part 3 applies to the relationship between distributors and customers.
- Part 4 regulates small customer complaints.
- Part 5 provides for the authorisation of retailers of energy.
- Part 6 establishes a retailer of last resort scheme.
- Part 7 establishes a small compensation claims regime to enable small customers to make small claims for compensation from distributors.
- Part 8 details the functions and powers of the Australian Energy Regulator.
- Part 9 details the functions and powers of the Australian Energy Market Commission.
- Part 10 provides for the National Energy Retail Rules.
- Part 11 provides for the National Energy Retail Regulations.
- Part 12 regulates compliance and performance
- Part 13 regulates enforcement.
- Part 14 deals with evidentiary matters.

³¹ We have reviewed the version of that Act in force as at the date of this report, namely version 28.11.2013.

³² *National Energy Retail Law*, s13.

³³ A “customer” is a person to whom “energy” is sold or who proposes to purchase “energy” – see *National Energy Retail Law*, s5. The concept of “customer” is one of the key concepts used throughout the *National Energy Retail Law* and the associated subordinate legislation.

Relevant definitions

For the purposes of the *National Energy Retail Law*:

- *Energy* means electricity or gas or both³⁴.
- *Gas* means “natural gas” within the meaning of the *National Gas Law*³⁵.

“Energy” would not include hydrogen because hydrogen is not “natural gas” within the meaning of the *National Gas Law*.

“Energy” would not include biogas unless the biogas is “natural gas” within the meaning of the *National Gas Law*.

Is it permissible under the *National Energy Retail Law* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law* to a pure hydrogen/biogas network

The *National Energy Retail Law* would not apply to a pure hydrogen network because the *National Energy Retail Law* regulates the relationships with consumers of energy and, for the purposes of the *National Energy Retail Law*, “energy” does not include hydrogen.

For the same reason, the *National Energy Retail Law* would not apply to a biogas network unless the biogas is “natural gas” within the meaning of the *National Gas Law*.

Where biogas is “natural gas” within the meaning of the *National Gas Law*, the *National Energy Retail Law* could apply to the biogas network where the network is a covered pipeline under the *National Gas Law* or the network operator is nominated under section 12 of the *National Energy Retail Law* to provide customer connection services for the network.

Other comments

None

³⁴ *National Energy Retail Law*, s2.

³⁵ *National Energy Retail Law*, s2.

National Energy Retail Rules

Introduction

The *National Energy Retail Rules*³⁶ are made under the *National Energy Retail Law*³⁷.

The *National Energy Retail Rules* govern the operation of the National Energy Retail Market.

- Part 2 regulates customer retail contracts.
- Part 3 deals with customers who are experiencing hardship due to financial difficulties.
- Part 4 regulates the relationship between distributors and customers.
- Part 5 regulates the relationship between distributors and retailers in relation to shared customers.
- Part 6 deals with de-energisation or disconnection of customer's premises.
- Part 7 provides the distributor and retailer obligations where there is life-support equipment at a customer's premises.
- Part 8 regulates prepayment meter systems.
- Part 9 establishes the exempt selling regime.
- Part 10 provides for retail market performance reports.
- Part 11 establishes electricity consumption benchmarks for customer retail contracts.
- Part 12 establishes the national energy retail consultation.

The *National Energy Retail Rules* are primarily focused on the sale and supply of energy to small retail customers, and provide the detailed content of the consumer protection measures and model contracts that govern the relationships between consumers, retailers and distributors.

Relevant definition

None

Is it permissible under the *National Energy Retail Rules* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Rules* which prohibits the injection of hydrogen or biogas into an existing distribution network.

³⁶ *National Energy Retail Rules*, version 11, commenced 1 February 2018.

³⁷ *National Energy Retail Law*, Part 10.

Comment on application of the *National Energy Retail Rules* to a pure hydrogen/biogas network

The *National Energy Retail Rules* would not apply to a distribution network with pure hydrogen or biogas (unless the biogas was “natural gas” within the meaning of the *National Gas Law*).

This is because:

- (a) the *National Energy Retail Rules* apply in relation to “customers” (as defined in the *National Energy Retail Law*);
- (b) customers are persons to whom “energy” is sold or who propose to purchase “energy” (as defined in the *National Energy Retail Law*); and
- (c) for the purposes of the *National Energy Retail Law*, “energy” does not include hydrogen and would not include biogas (unless the biogas was “natural gas” within the meaning of the *National Gas Law*).

Other comments

None.

National Energy Retail Regulations

Introduction

The *National Energy Retail Regulations* are made under the *National Energy Retail Law*³⁸.

Relevant definition

None

Is it permissible under the *National Energy Retail Regulations* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Regulations* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Regulations* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Regulations* which would affect the operation of a distribution system with pure hydrogen or biogas.

Other comments

None.

³⁸ *National Energy Retail Law*, Part 11. We have reviewed the version of the *National Energy Retail Regulations* in force as at the date of this report, which is version 19.12.2017.

AUSTRALIAN CAPITAL TERRITORY REGULATORY INSTRUMENTS

Gas Safety Act 2000 (ACT)

Introduction

The *Gas Safety Act 2000* (ACT) is an act about safety in relation to the use of gas³⁹.

The *Gas Safety Act 2000* (ACT) aims to:

- promote safe and efficient gas usage; and
- establish a regulatory system for:
 - the installation, operation, maintenance and repair of consumer piping systems;
 - the connection of gas appliances to consumer piping systems;
 - the commissioning, maintenance, repair and servicing of gas appliances connected to consumer piping systems;
 - the testing and inspection of consumer piping systems and gas appliances⁴⁰.

Relevant definition

Gas means –

- a) natural gas; or
- b) a gas (**LPG**) in its vapour phase composed predominantly of 1 or more of the following hydrocarbons:
 - (i) propane;
 - (ii) propene (propylene);
 - (iii) butane;
 - (iv) butane (butylene)⁴¹.

Natural gas has the meaning given in section 2 of the *National Gas (ACT) Law*. That is, it means a substance that:

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and

³⁹ We reviewed version R15, which is the current version, effective as of 14 October 2015.

⁴⁰ *Gas Safety Act 2000* (ACT), s6.

⁴¹ Refer to the Dictionary at the end of the *Gas Safety Act 2000* (ACT).

(c) is suitable for consumption⁴².

Is it permissible under the *Gas Safety Act 2000* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Safety Act 2000* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Safety Act 2000* to a pure hydrogen/biogas network

There are no provisions in the *Gas Safety Act 2000* which would affect the operation of a pure hydrogen or biogas distribution network.

Other comments

None.

⁴² Refer to the Dictionary at the end of the *Gas Safety Act 2000* (ACT).

Gas Safety Regulation 2001 (ACT)

Introduction

The *Gas Safety Regulation 2001 (ACT)* are the regulations made under the *Gas Safety Act 2000 (ACT)*⁴³.

Amongst other things, the *Gas Safety Regulation 2001 (ACT)* establishes:

- safety standards in relation to gas fitting work and gas appliance work;
- safety standards with respect to consumer piping systems and gas appliances; and
- the regulation of gas appliances.

Relevant definition

None.

Is it permissible under the *Gas Safety Regulation 2001* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Safety Regulation 2001* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Safety Regulation 2001* to a pure hydrogen/biogas network

There are no provisions in the *Gas Safety Regulation 2001* which would affect the operation of a pure hydrogen or biogas network.

Other comments

None.

⁴³ We reviewed version R16, which is the current version, effective as of 30 March 2015.

Utilities Act 2000 (ACT)

Introduction

The *Utilities Act 2000* (ACT) regulates the provision of electricity, gas, water and sewerage services⁴⁴.

Among other things, the *Utilities Act 2000* (ACT):

- establishes a licensing regime for the provision of utility services;
- establishes an energy industry levy;
- provides for the establishment of industry codes;
- grants statutory powers to network operators to be used in connection with the provision of utility services;
- grants statutory powers to a controller to take over operations of utility services; and
- establishes an administrative review procedure.

Relevant definition

Gas means natural gas as defined in the *National Gas (ACT) Law*, section 2⁴⁵.

Is it permissible under the *Utilities Act 2000* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There are no provisions in the *Utilities Act 2000* which prohibit the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *Utilities Act 2000* to a pure hydrogen/biogas network

The *Utilities Act 2000* applies to “utility services” as defined, which is dependent on the definition of “gas” in the Act⁴⁶.

“Gas” is defined as “natural gas” under the *National Gas (ACT) Law*, which is a substance that:

⁴⁴ We reviewed version R60, which is the current version, effective as of 1 January 2018.

⁴⁵ *Utilities Act 2000* (ACT), s8(3).

⁴⁶ *Utilities Act 2000* (ACT), s9.

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption.

Pure hydrogen is not “gas” within the meaning of the *Utilities Act 2000* because pure hydrogen is not a hydrocarbon, and is not principally methane.

If a distribution network were operated on pure hydrogen, the *Utilities Act 2000* would not apply to the services provided by that network as those services would not constitute “utility services” for the purposes of the Act.

This would have a number of significant implications:

- the operator would not be required to hold a licence under the *Utilities Act 2000* to operate a hydrogen network;⁴⁷
- the operator of the hydrogen network would not be subject to the energy industry levy;⁴⁸
- the operator would not have the power to compulsorily acquire land;⁴⁹
- the operator would not have the power to enter and occupy land for the purposes of installation of a network facility;⁵⁰
- the operator would not have the power to enter and occupy land to conduct maintenance on network facilities;⁵¹
- the operator would not have the power to appoint a person to enter premises for the purposes of inspecting meters and undertaking other functions;⁵² and
- the common law doctrine of fixtures will apply, such that the network would become part of the land on which it is situated and the owner of the network would lose ownership.⁵³

Some of these implications mean that, from a legal perspective, it is probably impractical to operate a pure hydrogen network in the absence of new legislation which extends the operation of the *Utilities Act 2000* to pure hydrogen networks or establishes a new regulatory framework for hydrogen networks.

⁴⁷ *Utilities Act 2000* (ACT), s 21.

⁴⁸ The energy industry levy applies to utilities which supply energy utility services – see *Utilities Act 2000* (ACT), s54D.

⁴⁹ *Utilities Act 2000* (ACT), s 104.

⁵⁰ *Utilities Act 2000* (ACT), s 105.

⁵¹ *Utilities Act 2000* (ACT), s 106.

⁵² *Utilities Act 2000* (ACT), s 117.

⁵³ *Utilities Act 2000* (ACT), s 120.

Similar comments apply to a biogas network where the biogas does not consist principally of methane or is not suitable for consumption or, for some other reason, does not constitute “natural gas” as defined in the *National Gas (ACT) Law*.

Other comments

None.

Utilities (Technical Regulation) Act 2014 (ACT)

Introduction

The *Utilities (Technical Regulation) Act 2014* (ACT) sets out technical requirements for utilities, and establishes a framework for technical codes to be made under the Act with specific requirements⁵⁴.

Relevant definition

None, see *Utilities Act 2000*.

Is it permissible under the *Utilities (Technical Regulation) Act 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Utilities (Technical Regulation) Act 2014* which prohibits the injection of hydrogen or biogas into an existing gas distribution network to the extent that the injection does not breach any technical codes imposed on the operator of the network by the technical regulator.⁵⁵

Comment on application of the *Utilities (Technical Regulation) Act 2014* to a pure hydrogen/biogas network

The *Utilities (Technical Regulation) Act 2014* applies to “regulated utility services” as defined in the *Utilities (Technical Regulation) Act 2014*⁵⁶.

For the purposes of the *Utilities (Technical Regulation) Act 2014*, “regulated utility services” includes the provision of a “district energy service”.

A pure hydrogen network will necessarily involve the provision of a “district energy service” where the pure hydrogen network is not connected to a natural gas network and hydrogen is provided by means of the network as a form of energy to more than 1 building or premises⁵⁷.

⁵⁴ We reviewed version R6, which is the current version, effective as of 8 November 2017.

⁵⁵ *Utilities (Technical Regulation) Act 2014* (ACT), s 16.

⁵⁶ The definition of ‘regulated utility service’ appears in the *Utilities (Technical Regulation) Act 2014* (ACT), s 9.

⁵⁷ See the definition of “district energy service” in section 9(2) of the *Utilities (Technical Regulation) Act 2014* (ACT).

In those circumstances, the provision of pure hydrogen will constitute a regulated utility service for the purposes of the *Utilities (Technical Regulation) Act 2014* (ACT)⁵⁸. This would have the following implications, namely:

- a person who proposes to construct a pure hydrogen network to provide a regulated utility service must obtain an operating certificate under the *Utilities (Technical Regulation) Act 2014* (ACT);⁵⁹
- a person who proposes to provide a regulated utility service by means of a pure hydrogen network must obtain an operating certificate under the *Utilities (Technical Regulation) Act 2014* (ACT);⁶⁰
- a regulated utility must comply with any applicable technical codes under the *Utilities (Technical Regulation) Act 2014* (ACT);⁶¹
- a regulated utility must take reasonable steps to comply with any directions given by the technical regulator under the *Utilities (Technical Regulation) Act 2014* (ACT);⁶²
- a regulated utility must report a “notifiable incident” within 24 hours after the regulated utility becomes aware of the notifiable incident;⁶³
- it is an offence for persons to do something which interferes with a regulated utility network or a network facility;⁶⁴
- a regulated utility has power to require landholders to stop interferences with the regulated utility network or network facility in certain circumstances;⁶⁵
- it is an offence for an unauthorised person to connect to a regulated utility network;⁶⁶

⁵⁸ The *Utilities (Technical Regulation) Act 2014* (ACT) could also apply to a pure hydrogen network where a regulation is made under section 10 to prescribe the provision of hydrogen as a regulated utility service. A regulation of this type can be made where the Minister is satisfied that the service includes infrastructure for the provision of a form of energy.

⁵⁹ *Utilities (Technical Regulation) Act 2014* (ACT), s51. It is an offence for an unlicensed regulated utility to construct infrastructure for a regulated utility service without an operating certificate.

⁶⁰ *Utilities (Technical Regulation) Act 2014* (ACT), s43 and 50. It is an offence for an unlicensed regulated utility to provide a regulated utility service without an operating certificate.

⁶¹ *Utilities (Technical Regulation) Act 2014* (ACT), s16.

⁶² *Utilities (Technical Regulation) Act 2014* (ACT), s19 and 21.

⁶³ *Utilities (Technical Regulation) Act 2014* (ACT), s29.

⁶⁴ *Utilities (Technical Regulation) Act 2014* (ACT), s30.

⁶⁵ *Utilities (Technical Regulation) Act 2014* (ACT), s32.

⁶⁶ *Utilities (Technical Regulation) Act 2014* (ACT), s37.

In the case of a biogas network, the *Utilities (Technical Regulation) Act 2014 (ACT)* will apply to the biogas network, and the provision of biogas from the network, where:

- (a) the biogas is “natural gas” within the meaning of the National Gas Law; or
- (b) the biogas network is not connected to a natural gas network and biogas is provided by means of the network as a form of energy to more than 1 building or premises⁶⁷.

Other comments
None

⁶⁷ In this case, the provision of “biogas” is a “district energy service” for the purposes of the *Utilities (Technical Regulation) Act 2014 (ACT)*.

Utility Networks (Public Safety) Regulation 2001 (ACT)

Introduction

The *Utility Networks (Public Safety) Regulation 2001 (ACT)* are regulations under the *Utilities Act 2000 (ACT)*⁶⁸.

The *Utility Networks (Public Safety) Regulation 2001 (ACT)* sets out public safety requirements for electricity, water and sewerage, and gas network facilities.

Relevant definition

None, see *Utilities Act 2000*.

Is it permissible under the *Utility Networks (Public Safety) Regulation 2001* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Utility Networks (Public Safety) Regulation 2001* which prohibits the injection of hydrogen or biogas into an existing gas distribution network⁶⁹.

Comment on application of the *Utility Networks (Public Safety) Regulation 2001* to a pure hydrogen/biogas network

The *Utility Networks (Public Safety) Regulation 2001* applies in relation to “gas network facilities”. These are facilities which are part of a network for the supply of natural gas within the meaning of the National Gas Law⁷⁰.

The *Utility Networks (Public Safety) Regulation 2001* will not apply to a pure hydrogen network because pure hydrogen is not natural gas within the meaning of the National Gas Law.

The *Utility Networks (Public Safety) Regulation 2001* will apply to a biogas network where the biogas is natural gas within the meaning of the National Gas Law but will not apply where the

⁶⁸ We have reviewed version R5, which is the current version, effective as of 14 June 2013.

⁶⁹ This assumes that the hydrogen or biogas is injected by the network operator or with the authority of the network operator.

⁷⁰ See the definition of “gas network facility” in the dictionary at the end of the *Utility Networks (Public Safety) Regulation 2001*.

biogas is not natural gas within the meaning of the National Gas Law.

In cases where the *Utility Networks (Public Safety) Regulation 2001* does not apply, the relevant network will not have the benefit of the protections afforded by the regulations. The regulations prohibit the following activities:

- objects being thrown at a gas network facility⁷¹;
- driving over underground gas network facilities without reasonable excuse⁷²;
- the placement of corrosive, abrasive, heavy or harmful material or substance that is likely to damage an underground gas network facility above or adjacent to the facility⁷³;
- excavations near a gas network facility that are likely to cause damage to the facility or endanger the safe or efficient operation;⁷⁴
- excavations within a certain distance of a gas network;⁷⁵
- changing the ground level above or adjacent to a gas network facility that is likely to cause damage to the facility or endanger its safe or efficient operation or impede reasonable access;⁷⁶
- climbing on a gas network facility;⁷⁷ or
- working on a gas network facility in a way that is likely to endanger people or property or interrupt or endanger the safe or efficient operation of the facility without reasonable excuse.⁷⁸

Other comments

None

⁷¹ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 37.

⁷² *Utility Networks (Public Safety) Regulation 2001* (ACT), r 38.

⁷³ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 39.

⁷⁴ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 40(a).

⁷⁵ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 40(b).

⁷⁶ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 41.

⁷⁷ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 42.

⁷⁸ *Utility Networks (Public Safety) Regulation 2001* (ACT), r 43.

National Energy Retail Law (ACT) Act 2012 (ACT)

Introduction

The *National Energy Retail Law (ACT) Act 2012 (ACT)* applies the *National Energy Retail Law* as a law of the Territory⁷⁹.

Amongst other things, the Act:

- confers functions on the AER and the Australian Competition Tribunal; and
- validates instruments and decisions made by the AER.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (ACT) Act 2012* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (ACT) Act 2012* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (ACT) Act 2012* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (ACT) Act 2012* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

⁷⁹ We reviewed version R5, which is the current version, effective as of 2 July 2017.

National Energy Retail Law (ACT) Regulation 2012 (ACT)

Introduction

The *National Energy Retail Law (ACT) Regulation 2012 (ACT)* is made pursuant to the *National Energy Retail Law (ACT) Act 2012*.⁸⁰

Among other things, the Regulation:

- prescribes entities exempt from the local energy retail law but subject to NSW energy retail law with respect to electricity distribution;
- requires distributors to restore the interruption of the supply of energy to a customer's premises within 12 hours after the start of the interruption;
- prescribes ActewAGL Retail as the local area retailer for electricity and gas; and
- makes minor modifications to the National Energy Retail Rules.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (ACT) Regulation 2012* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (ACT) Regulation 2012* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (ACT) Regulation 2012* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (ACT) Regulation 2012* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

⁸⁰ We reviewed version R4, which is the current version, effective as of 2 July 2017.

National Gas (ACT) Act 2008 (ACT)

Introduction

The *National Gas (ACT) Act 2008 (ACT)* adopts the National Gas Law as a law of the Territory⁸¹.

Relevant definition

See definition in *National Gas Law*.⁸²

Is it permissible under the *National Gas (ACT) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (ACT) Act 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (ACT) Act 2008* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (ACT) Act 2008* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

⁸¹ We reviewed version R5, which is the current version, effective as of 2 July 2017.

⁸² *National Gas (ACT) Act 2008 (ACT)*, s 4.

Retail Market Procedures (NSW and ACT)

Introduction

The *Retail Market Procedures (NSW and ACT)* are made pursuant to the *National Gas Law* and form part of the regulatory framework applicable to the retail gas market⁸³.

Amongst other things, the *Retail Market Procedures*:

- establish the meter database and regulate meter reading;
- establish and regulate the MIRN database;
- establish customer transfer processes;
- regulate gas balancing arrangements.

Relevant definition

Gas has the meaning given to “natural gas” in the *National Gas Law*.

Is it permissible under the *Retail Market Procedures (NSW and ACT)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There are no provisions in the *Retail Market Procedures (NSW and ACT)* which prohibit the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *Retail Market Procedures (NSW and ACT)* to a pure hydrogen/biogas network

The *Retail Market Procedures (NSW and ACT)* apply to network sections situated in:

- (a) local government areas referred to in a reticulator’s authorisation under the *Gas Supply Act 1996* (NSW); and
- (b) areas referred to in any licence to supply or distribute gas under the *Utilities Act 2000* (ACT)⁸⁴.

⁸³ We reviewed version 18, which became effective as of 31 July 2017.

⁸⁴ Retail Market Procedures (NSW and ACT), clause 1.1.2. The distribution systems for Albury and Tweed Shire are excluded.

These network sections are natural gas networks. Consequently, the *Retail Market Procedures (NSW and ACT)* will not apply to:

- (a) a pure hydrogen network; or
- (b) a biogas network where the biogas is not “natural gas” within the meaning of the *National Gas Law*.

The *Retail Market Procedures (NSW and ACT)* will apply to a biogas network where the biogas is “natural gas” within the meaning of the *National Gas Law* and the network is within one of the areas referenced in a reticulator’s authorisation under the *Gas Supply Act 1996* (NSW) or a licence under the *Utilities Act 2000* (ACT).

Other comments

The *Retail Market Procedures (NSW and ACT)* contain provisions which facilitate the operation of the retail gas market in New South Wales and the Australian Capital Territory.

For the reasons explained above, these provisions will not apply to a pure hydrogen network or to a network containing biogas where the biogas is not natural gas.

From a legal perspective, this is unlikely to create any significant practical issues where there is a single retailer supplying hydrogen or biogas through the network and there is no need to have mechanisms which facilitate customer transfers or gas balancing and allocation between multiple network users.

However, if it is necessary to accommodate multiple retailers or users in a hydrogen or biogas network, this might be impractical in the absence of the *Retail Market Procedures (NSW and ACT)* or other arrangements which replicate the operation or effect of the *Retail Market Procedures (NSW and ACT)*.

NEW SOUTH WALES REGULATORY INSTRUMENTS

Gas Supply Act 1996 (NSW)

Introduction

The *Gas Supply Act 1996* (NSW) establishes the framework to regulate the supply of gas in New South Wales⁸⁵.

Under the Act, a natural gas network operator must hold a Reticulator's Authorisation, and operators of gas networks that convey gases other than natural gas require a Distributor's Licence.

Relevant definition

Gas means:

- (a) natural gas, or
- (b) liquefied petroleum gas, or
- (c) any other substance that the regulations declare to be a gas for the purposes of this Act⁸⁶.

Natural gas has the same meaning as it has in the *National Gas (NSW) Law*.⁸⁷ Under the *National Gas (NSW) Law*, "natural gas" means a substance that –

- (a) is gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption⁸⁸.

Liquefied petroleum gas means a liquid or gaseous substance containing a mixture of hydrocarbons, basically consisting of butane or butane or propane or propene, or any mixture of them⁸⁹.

⁸⁵ We reviewed the current version of the *Gas Supply Act 1996* (NSW), which was effective as of 1 July 2017.

⁸⁶ See the definition of "gas" in the dictionary at the end of the *Gas Supply Act 1996* (NSW). As at the date of this report, there is no other substance which has been declared by the regulations to be a gas for the purposes of the Act.

⁸⁷ See the definition of "natural gas" in the dictionary at the end of the *Gas Supply Act 1996* (NSW).

⁸⁸ *National Gas Law*, s2.

Is it permissible under the *Gas Supply Act 1996* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply Act 1996* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that the injection of hydrogen or biogas does not:

- (a) breach any licence or authorisation conditions;⁹⁰ or
- (b) any market operations rules made by the Minister under the *Gas Supply Act 1996* (NSW)⁹¹.

Comment on application of the *Gas Supply Act 1996* to a pure hydrogen/biogas network

As at the date of this report, “hydrogen” is not a “gas” for the purposes of the *Gas Supply Act 1996* (NSW) and, therefore, the *Gas Supply Act 1996* (NSW) would not apply to a pure hydrogen network⁹².

This would have a number of significant implications. A network operator that operates a distribution network that is not subject to the *Gas Supply Act 1996* will not have the following statutory rights:

- the power to carry out erection and placement of gas works, including the power to carry out work on a public road;⁹³
- the power to require alterations in the position of any conduit;⁹⁴
- the power to serve a written notice requiring a person to modify a structure or thing placed in, on or near its gas works that it has reasonable cause to believe is destroying, damaging or interfering with those works;⁹⁵

⁸⁹ See the definition of “liquefied petroleum gas” in the dictionary at the end of the *Gas Supply Act 1996* (NSW).

⁹⁰ *Gas Supply Act 1996* (NSW), s 11.

⁹¹ *Gas Supply Act 1996* (NSW), s 33L. There are no market operations rules currently in force under the *Gas Supply Act 1996* (NSW), s 33L.

⁹² The definition of “gas” allows regulations to declare a substance to be a gas for the purposes of the *Gas Supply Act 1996* (NSW). As at the date of this report, there are no regulations which declare hydrogen to constitute a gas for the purposes of the Act.

⁹³ *Gas Supply Act 1996* (NSW), s 47.

⁹⁴ *Gas Supply Act 1996* (NSW), s 49. A conduit is anything that is in or under a public road (or any other land on which no building or other structure is located) and is used for the conveyance of a substance, energy or signals.

- the power to serve a written notice requiring a person to modify or cease excavation work in, on or near its gas works if it has reasonable cause to believe the excavation work could destroy, damage or interfere with its gas works, or could make those gas works become a potential risk to public safety;⁹⁶
- the exemption from taxes and other charges to any local council or roads authority in respect of gas works located in a public reserve or public road;⁹⁷
- the statutory ownership of gas works, whether or not the land in, on or over which they are situated is owned by the network operator, and the protection of the network operator's gas works against any judgment of a Court;⁹⁸
- the right to interrupt the supply of gas to a customer for purposes related to the safe and efficient operation of its gas works;⁹⁹
- the power of gas industry inspectors to enter premises for the purpose of exercising the functions conferred or imposed on a network operator under the Act;¹⁰⁰

In addition, a network operator that is not subject to the *Gas Supply Act 1996* will lose statutory protections:

- against theft of gas;¹⁰¹
- against unauthorised interference with gas works;¹⁰²
- against unauthorised interference with gas meters;¹⁰³
- against unauthorised interference with network operators' seals;¹⁰⁴
- against unauthorised connections;¹⁰⁵

⁹⁵ *Gas Supply Act 1996* (NSW), s 50.

⁹⁶ *Gas Supply Act 1996* (NSW), s 50A.

⁹⁷ *Gas Supply Act 1996* (NSW), s 51.

⁹⁸ *Gas Supply Act 1996* (NSW), s 52.

⁹⁹ *Gas Supply Act 1996* (NSW), s 53.

¹⁰⁰ *Gas Supply Act 1996* (NSW), s 55.

¹⁰¹ *Gas Supply Act 1996* (NSW), s 65.

¹⁰² *Gas Supply Act 1996* (NSW), s 66.

¹⁰³ *Gas Supply Act 1996* (NSW), s 67.

¹⁰⁴ *Gas Supply Act 1996* (NSW), s 68.

- against unauthorised increase in capacity of connections;¹⁰⁶
- against unauthorised alterations and additions to gas installations;¹⁰⁷ and
- against the obstruction of inspectors.¹⁰⁸

These implications mean that it is probably impractical from a legal perspective to operate a pure hydrogen network without legislative change to extend the operation of the *Gas Supply Act 1996*. This could come in the form of a regulatory instrument prescribing hydrogen as a “gas” for the purposes of the Act.¹⁰⁹

Similar comments apply in the case of biogas networks. The *Gas Supply Act 1996* (NSW) would not apply to a biogas network unless the biogas was “natural gas” or was declared by regulation to constitute a “gas” for the purposes of the *Gas Supply Act 1996* (NSW)¹¹⁰.

Other comments

None.

¹⁰⁵ *Gas Supply Act 1996* (NSW), s 69.

¹⁰⁶ *Gas Supply Act 1996* (NSW), s 70.

¹⁰⁷ *Gas Supply Act 1996* (NSW), s 71.

¹⁰⁸ *Gas Supply Act 1996* (NSW), ss 72.

¹⁰⁹ *Gas Supply Act 1996* (NSW), s 4 (see definition of “gas”).

¹¹⁰ The definition of “gas” allows regulations to declare a substance to be a gas for the purposes of the *Gas Supply Act 1996* (NSW). As at the date of this report, there are no regulations which declare biogas to constitute a gas for the purposes of the Act.

Gas Supply (Natural Gas Retail) Regulation 2014 (NSW)

Introduction

The *Gas Supply (Natural Gas Retail) Regulation 2014* (NSW) is made under the *Gas Supply Act 1996* (NSW)¹¹¹.

The Regulation makes provision for or with respect to the following:

- (a) the adoption of a Social Programs for Energy Code by the Minister of Resources and Energy (with the concurrence of the Treasurer) which may require particular services to be provided by distributors, reticulators, retailers or exempt persons at discount prices or free of charge and may also provide for the payment of Government subsidies that finance such charges to be paid to trust accounts;
- (b) a distributor service standard requiring distributors to issue post-disconnection notices to small customers after premises are de-energised at the request of a retailer; and
- (c) caps on the civil monetary liability of a scheme operator for negligent acts and omissions in exercising functions under a wholesale natural gas market scheme.

Relevant definition

Gas means natural gas.

Is it permissible under the *Gas Supply (Natural Gas Retail) Regulation 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply (Natural Gas Retail) Regulation 2014* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *Gas Supply (Natural Gas Retail) Regulation 2014* to a pure hydrogen/biogas network

There are no provisions in the *Gas Supply (Natural Gas Retail) Regulation 2014* which would affect the operation of a hydrogen network or a biogas network.

¹¹¹ We reviewed the current version of the *Gas Supply (Natural Gas Retail) Regulation 2014* (NSW), which was effective as of 22 August 2014.

Other comments

None.

Gas Supply (Safety and Network Management) Regulation 2013 (NSW)

Introduction

The *Gas Supply (Safety and Network Management) Regulation 2013* (NSW) is made under the *Gas Supply Act 1996* (NSW)¹¹².

The *Gas Supply (Safety and Network Management) Regulation 2013* (NSW) makes provision with respect to the following:

- (a) the safety of gas networks;
- (b) the safety and operating plans for gas networks;
- (c) the standards for natural gas;
- (d) the protection of underground gas pipelines;
- (e) the reports to be given to the Director-General of the Department of Trade and Investment, Regional Infrastructure and Services in relation to the maintenance and safety aspects of the operation of a gas network;
- (f) the power of the Director-General to delegate functions; and
- (g) savings and formal matters.

Relevant definition

Compliant natural gas means natural gas that complies with the standards set out in AS 4564-2011¹¹³.

Also see definition of “gas” in the *Gas Supply Act* (above).

Is it permissible under the *Gas Supply (Safety and Network Management) Regulation 2013* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There are no provisions in the *Gas Supply (Safety and Network Management) Regulation 2013* (NSW) which expressly prohibit the injection of hydrogen or biogas into an existing gas distribution network. However, a network operator could not inject hydrogen or biogas into an existing gas distribution network where:

- (a) the injection of hydrogen or biogas made unsafe the operation of the gas network;¹¹⁴

¹¹² We reviewed the current version of the *Gas Supply (Safety and Network Management) Regulation 2013* (NSW), which was effective as of 8 June 2017.

¹¹³ *Gas Supply (Safety and Network Management) Regulation 2013* (NSW), r 22.

(b) the injection of hydrogen or biogas does not comply, or results in non-compliance, with the safety and operating plan for the network;¹¹⁵ or

(c) the injection of hydrogen or biogas causes the natural gas within the network to become non-compliant natural gas.¹¹⁶

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Comment on application of the *Gas Supply (Safety and Network Management) Regulation 2013* to a pure hydrogen/biogas network

As at the date of this report, the *Gas Supply (Safety and Network Management) Regulation 2013* would not apply to a pure hydrogen network because “hydrogen” is not a “gas” for the purposes of the *Gas Supply Act 1996* (NSW).

As at the date of this report, the *Gas Supply (Safety and Network Management) Regulation 2013* would not apply to a biogas network unless the biogas was “natural gas” as defined in the *National Gas Law*. If biogas was “natural gas”, the *Gas Supply (Safety and Network Management) Regulation 2013* would apply to the biogas network.

Other comments

None.

¹¹⁴ *Gas Supply (Safety and Network Management) Regulation 2013* (NSW), r 6(1), which requires a network operator to maintain and operate a safe gas network.

¹¹⁵ *Gas Supply (Safety and Network Management) Regulation 2013* (NSW), r 11(4), which requires a network operator to maintain and operate its gas network in accordance with the safety and operating plan.

¹¹⁶ *Gas Supply (Safety and Network Management) Regulation 2013* (NSW), r 23. Regulation 23 states that a network operator must not convey, or supply, non-compliant natural gas through a distribution pipeline. Natural gas is non-compliant if it does not comply with the standards set out in Australian Standard AS 4564-2011, *Specifications for general purpose natural gas* (see regulation 22).

National Energy Retail Law (Adoption) Act 2012 (NSW)

Introduction

The *National Energy Retail Law (Adoption) Act 2012 (NSW)* applies the *National Energy Retail Law* as a law of New South Wales¹¹⁷.

Relevant definition

Gas means natural gas within the meaning of the *National Gas Law*¹¹⁸.

Is it permissible under the *National Energy Retail Law (Adoption) Act 2012* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Adoption) Act 2012* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law (Adoption) Act 2012* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Adoption) Act 2012* which would affect the operation of a pure hydrogen network or a biogas network¹¹⁹.

¹¹⁷ We reviewed the current version of the *National Energy Retail Law (Adoption) Act 2012 (NSW)*, which was effective as of 1 July 2017.

¹¹⁸ *National Energy Retail Law (Adoption) Act 2012 (NSW)*, s3(2), which incorporates the definition of “gas” from the *National Energy Retail Law* set out in the schedule to the *National Energy Retail Law (South Australia) Act 2011 (SA)*.

¹¹⁹ The *National Energy Retail Law* could apply to a biogas network where the biogas is “natural gas” within the meaning of the *National Gas Law* – see comments on the *National Energy Retail Law* earlier in this report.

Other comments
None.

National Energy Retail Law (Adoption) Regulation 2013 (NSW)

Introduction

The *National Energy Retail Law (Adoption) Regulation 2013 (NSW)* is made under the *National Energy Retail Law (Adoption) Act 2012*¹²⁰.

Amongst other things, the Regulation:

- nominates local area retailers under the National Law;
- modifies the National Energy Retail Rules;
- exempts certain entities from the National Law; and
- provides savings and transitional provisions.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (Adoption) Regulation 2013* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Adoption) Regulation 2013* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (Adoption) Regulation 2013* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Adoption) Regulation 2013* which would affect the operation of a distribution system with pure hydrogen or biogas.

Other comments

None.

¹²⁰ We reviewed the current version of the *National Energy Retail Law (Adoption) Regulation 2013 (NSW)*, which was effective as of 1 January 2018.

National Gas (New South Wales) Act 2008 (NSW)

Introduction

The *National Gas (New South Wales) Act 2008* (NSW) applies the *National Gas Law* as a law of New South Wales¹²¹.

Relevant definition

See *National Gas Law*.

Is it permissible under the *National Gas (New South Wales) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There are no provisions in the *National Gas (New South Wales) Act 2008* which prohibit the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (New South Wales) Act 2008* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (New South Wales) Act 2008* which would affect the operation of a distribution network with pure hydrogen or biogas¹²².

Other comments

None.

¹²¹ We reviewed the current version of the *National Gas (New South Wales) Act 2008* (NSW), which was effective as of 1 July 2013.

¹²² See earlier in this report for comments on the application of the *National Gas Law* to hydrogen networks and biogas networks.

NORTHERN TERRITORY REGULATORY INSTRUMENTS

National Gas (Northern Territory) Act (NT)

Introduction

The *National Gas (Northern Territory) Act (NT)* applies the *National Gas Law* as a law of the Northern Territory¹²³.

Relevant definition

None.

Is it permissible under the *National Gas (Northern Territory) Act* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (Northern Territory) Act* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Gas (Northern Territory) Act (NT)* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (Northern Territory) Act* which would affect the operation of a distribution network with pure hydrogen or biogas¹²⁴.

¹²³ We reviewed the current version of the *National Gas (Northern Territory) Act 2008 (NT)*, which is REPN037.

¹²⁴ See earlier in this report for comments on the application of the *National Gas Law* to hydrogen networks and biogas networks.

Other comments

None.

QUEENSLAND REGULATORY INSTRUMENTS

Gas Supply Act 2003 (Qld)

Introduction

The *Gas Supply Act 2003* (Qld) is about the transport and supply of processed natural gas¹²⁵. The purposes of the *Gas Supply Act 2003* (Qld) are to:

- promote efficient and economical processed natural gas supply;
- ensure the interest of customers are protected by:
 - (i) regulating the distribution services for reticulated processed natural gas; and
 - (ii) providing for the making of relevant distribution network codes.¹²⁶

The *Gas Supply Act 2003* does not regulate gases other than processed natural gas and LPG in relation to LPG distribution pipelines and LPG distribution systems.¹²⁷

Relevant definitions

Processed natural gas is a substance that –

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons and other substances; and
- (c) is more than half methane; and
- (d) has been processed to be suitable for consumption.¹²⁸

LPG means a substance that:

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) is more than half propane, propylene (also called propene) or butane, in any combination; and
- (c) has been processed to be suitable for consumption.¹²⁹

¹²⁵ We reviewed the current version of the *Gas Supply Act 2003* (Qld), which is effective as of 1 July 2017.

¹²⁶ *Gas Supply Act 2003* (Qld), s 3.

¹²⁷ *Gas Supply Act 2003* (Qld), s 4(c).

¹²⁸ *Gas Supply Act 2003* (Qld), s 11.

¹²⁹ *Gas Supply Act 2003* (Qld), Schedule 2.

This would not include pure hydrogen and might not include biogas, depending on whether or not the biogas in question falls within the definition of “processed natural gas”.¹³⁰

Is it permissible under the *Gas Supply Act 2003* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply Act 2003* which prohibits the injection of hydrogen or biogas into an existing gas distribution network, provided that the injection does not breach any conditions imposed on the distribution authority.¹³¹

Comment on application of the *Gas Supply Act 2003* to a pure hydrogen/biogas network

The *Gas Supply Act 2003* (Qld) does not regulate gases other than processed natural gas and LPG in relation to LPG distribution pipelines and LPG distribution systems¹³².

The *Gas Supply Act 2003* will not apply to a distribution network which transports pure hydrogen and will not apply to a biogas network (unless the biogas constitutes “processed natural gas” or “LPG” as defined in the *Gas Supply Act 2003*).

If the *Gas Supply Act 2003* does not apply to a network, this would have a number of significant implications. The distributor would not have:

- the right to carry out gas infrastructure work in a publicly controlled place;¹³³
- ownership over gas infrastructure that has become part of land;¹³⁴
- the right to appoint distribution officers:
 - (i) who are public officials for the purposes of the *Police Powers and Responsibilities Act 2000* (Qld);¹³⁵ and

¹³⁰ We assume that, by definition, “biogas” cannot be LPG because biogas would not comprise more than half propane, propylene (also called propene) or butane.

¹³¹ *Gas Supply Act 2003* (Qld), Ch 2, Pt 1, Div 2. Also see s 35(b) for any other conditions imposed by the regulator.

¹³² *Gas Supply Act 2003* (Qld), s 4(c).

¹³³ *Gas Supply Act 2003* (Qld), s 78.

¹³⁴ *Gas Supply Act 2003* (Qld), s 100. Note that “gas infrastructure” is a distribution pipeline or system for the transportation or supply of processed natural gas – see *Gas Supply Act 2003* (Qld), s 13, 14 and 75.

¹³⁵ *Gas Supply Act 2003* (Qld), ss 132 – 134. Under the *Police Powers and Responsibilities Act 2000* (Qld), a public official can call on members of the police for some limited assistance.

- (ii) who have statutory powers of entry under the *Gas Supply Act 2003*.¹³⁶

In addition, the distributor would also not have the benefit of protections in the *Gas Supply Act 2003*:

- against wilful tampering with gas infrastructure;¹³⁷ or
- unlawful taking of processed natural gas;¹³⁸ or
- the immunity from civil liability which is available to distributors in certain circumstances in relation to non-NERL distribution systems where:
 - (i) there is a partial or total failure to supply processed natural gas; or
 - (ii) defective reticulated processed natural gas is supplied to a person.¹³⁹

Similar comments apply in relation to a biogas network where the biogas is not “processed natural gas” or “LPG” for the purposes of the *Gas Supply Act 2003*.

Because of the implications listed above, it is probably impractical from a legal perspective to operate a distribution network with pure hydrogen or biogas in the absence of legislative or regulatory change.

Other comments

Section 251 of the *Gas Supply Act 2003* gives the Minister power to make an insufficiency of supply declaration if the Minister reasonably believes the supply of processed natural gas in the area:

- (a) is, or is likely to be, disrupted or
- (b) is, or is likely to become, insufficient for the reasonable requirements of the community, or apart of the community, in the area.

Whilst an insufficiency of supply declaration is in force, the Minister may give directions to distributors and other industry participants to do or not do something to ensure the safe supply of processed natural gas in the area that is subject to the insufficiency of supply declaration.¹⁴⁰

These provisions are notable because:

- (a) the provisions would empower the Minister to direct a gas distributor to inject hydrogen or

¹³⁶ *Gas Supply Act 2003* (Qld), ss 138 -140.

¹³⁷ *Gas Supply Act 2003* (Qld), s 287.

¹³⁸ *Gas Supply Act 2003* (Qld), s 289.

¹³⁹ *Gas Supply Act 2003* (Qld), s 316.

¹⁴⁰ *Gas Supply Act 2003* (Qld), s 254.

biogas into a network where that might ensure the safe supply of processed natural gas;
and

- (b) taken literally, the provisions might empower the Minister to prevent the injection of hydrogen or biogas into a gas distribution network where the resultant mixture no longer constitutes “processed natural gas” within the meaning of the *Gas Supply Act 2003*.

In the absence of a reasonable excuse, failure to comply with a direction is a criminal offence.¹⁴¹

¹⁴¹ *Gas Supply Act 2003* (Qld), s 255.

Gas Supply Regulation 2007 (Qld)

Introduction

The *Gas Supply Regulation 2007 (Qld)* is made under the *Gas Supply Act 2003*¹⁴². The Regulation:

- prescribes the categories or types of customers for the purposes of the *Gas Supply Act 2003*;
- establishes procedures for making or amending industry codes under the *Gas Supply Act 2003*;
- regulates disconnection and reconnection of premises; and
- specifies fees for the purposes of the *Gas Supply Act 2003*.

Relevant definitions

None.

Is it permissible under the *Gas Supply Regulation 2007* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply Regulation 2007* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Supply Regulation 2007* to a pure hydrogen/biogas network

Like the *Gas Supply Act 2003*, the *Gas Supply Regulation 2007* applies in relation to processed natural gas and will not apply in relation to a distribution network which transports pure hydrogen or to a biogas network (unless the biogas constitutes “processed natural gas” or “LPG” as defined in the *Gas Supply Act 2003*).

¹⁴² We reviewed the current version of the *Gas Supply Regulation 2007 (Qld)*, which was effective as of 1 July 2017.

Other comments
None.

Gas Distribution Network Code

Introduction

The *Gas Distribution Network Code* is made by the Queensland Competition Authority pursuant to the *Gas Supply Act 2003* (Qld).¹⁴³

The *Gas Distribution Network Code* provides customer protection provisions for small customers in relation to gas infrastructure that does not form part of a distribution system under the National Energy Retail Law (as it applies in Queensland)¹⁴⁴.

Relevant definitions

For the purposes of the *Gas Distribution Network Code*, the terms “customer”, “distributor”, “distribution authority”, “distribution system” and “processed natural gas” have the meanings given to those terms in the *Gas Supply Act 2003*.¹⁴⁵

The effect is that the *Gas Distribution System Code* applies to gas networks which distribute “processed natural gas” (as defined in the *Gas Supply Act 2003*).

The *Gas Distribution Network Code* does not apply to networks which distribute pure hydrogen or to networks which distribute biogas where the biogas is not “processed natural gas” (as defined in the *Gas Supply Act 2003*).

Is it permissible under the *Gas Distribution Network Code* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution Network Code* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Distribution Network Code* to a pure hydrogen/biogas network

The *Gas Distribution Network Code* would not apply to distribution networks which distribute pure

¹⁴³ *Gas Supply Act 2003* (Qld), s 270E(1).

¹⁴⁴ We reviewed the current version of the *Gas Distribution Network Code*, which is version 1, effective as of 1 July 2015.

¹⁴⁵ *Gas Distribution Network Code*, cl 3.1.1.

hydrogen or to networks which distribute biogas where the biogas is not “processed natural gas” (as defined in the *Gas Supply Act 2003*).

If a network distributes “biogas” which is “processed natural gas” (as defined in the *Gas Supply Act 2003*), the *Gas Distribution Network Code* will apply to that network in the same way as it applies to other gas distribution networks.

Other comments

None.

Petroleum and Gas (Production and Safety) Act 2004 (Qld)

Introduction

The *Petroleum and Gas (Production and Safety) Act 2004* (Qld) is an act about exploring for, recovering and transporting by pipeline, petroleum and fuel gas and ensuring the safe and efficient carrying out of those activities.¹⁴⁶

Within the *Petroleum and Gas (Production and Safety) Act 2004*:

- Chapter 7 contains provisions which regulate fuel gas quality and characteristics for consumers;
- Chapter 8 deals with petroleum and fuel gas measurement; and
- Chapter 9 deals with safety, including fuel gas safety¹⁴⁷.

Relevant definitions

For the purposes of the *Petroleum and Gas (Production and Safety) Act 2004*:

- “fuel gas” is:
 - (a) LPG;
 - (b) processed natural gas; or
 - (c) another substance prescribed under a regulation that is similar to LPG or processed natural gas;¹⁴⁸
- “processed natural gas” means a substance that:
 - (a) is in a gaseous state at standard temperature and pressure; and
 - (b) consists of naturally occurring hydrocarbons and other substances;
 - (c) is more than half by volume, methane; and
 - (d) has been processed to be suitable for use by consumers of fuel gas;¹⁴⁹
- “LPG” (also called ‘LP gas’ and ‘liquefied petroleum gas’) is a substance that:
 - (a) is in a gaseous state at standard temperature and pressure; and
 - (b) is predominantly propane, propylene or butane; and
 - (c) has been processed to be suitable for use by consumers;¹⁵⁰

¹⁴⁶ *Petroleum and Gas (Production and Safety) Act 2004* (Qld), long title.

¹⁴⁷ We reviewed the current version of the *Petroleum and Gas (Production and Safety) Act 2004* (Qld), which is the reprint current from 28 September 2017.

¹⁴⁸ *Petroleum and Gas (Production and Safety) Act 2004* (Qld), s11(2).

¹⁴⁹ *Petroleum and Gas (Production and Safety) Act 2004* (Qld), s11(3).

¹⁵⁰ *Petroleum and Gas (Production and Safety) Act 2004* (Qld), s11(1).

- “standard temperature and pressure” means an absolute pressure of 101.325kPa at a temperature of 15°C.¹⁵¹

The definition of “fuel gas” includes “... another substance prescribed under a regulation that is similar to LPG or processed natural gas”. For the purposes of this definition, the following substances have been prescribed:

- (a) hydrogen used or intended to be used as fuel;
- (b) biogas;
- (c) gas produced from a waste disposal tip;
- (d) gas produced during the treatment of sewerage; and
- (e) a substance that is a mixture of LPG and air, known as ‘synthetic natural gas’.¹⁵²

The effect of this is that “fuel gas” includes both hydrogen and biogas for the purposes of the *Petroleum and Gas (Production and Safety) Act 2004*.

Is it permissible under the *Petroleum and Gas (Production and Safety) Act 2004* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Petroleum and Gas (Production and Safety) Act 2004* which prohibits the injection of hydrogen or biogas into an existing distribution network.

However, Chapter 7 of the *Petroleum and Gas (Production and Safety) Act 2004* regulates fuel gas quality and characteristics.

In the case of quality, Chapter 7:

- contemplates that a regulation may prescribe a quality for fuel gas to be supplied to consumers;¹⁵³ and
- makes it an offence to supply fuel gas which is not of the prescribed quality unless there is a gas quality agreement in place or a gas quality approval for the gas.¹⁵⁴

The regulations currently prescribe quality standards for:

- LPG used for heating; and
- processed natural gas

but not for other types of fuel gas, such as pure hydrogen or biogas.¹⁵⁵

¹⁵¹ *Petroleum and Gas (Production and Safety) Act 2004* (Qld), s11(4).

¹⁵² *Petroleum and Gas (General Provisions) Regulation 2017*, reg 6.

¹⁵³ *Petroleum and Gas (Production and Safety) Act 2004*, s 620.

¹⁵⁴ *Petroleum and Gas (Production and Safety) Act 2004*, s 621.

In the case of LPG used for heating, the regulations require LPG to comply with AS 4670 'Commercial propane and commercial butane for heating purposes' (2006) and also require LPG to not have an average mole content of propylene in excess of 50%.¹⁵⁶

In the case of processed natural gas, the gas is required to comply with AS 4564 'Specification for general purpose natural gas'.¹⁵⁷

Where hydrogen or biogas are injected into a natural gas network or an LPG network, the resultant mixture will need to comply with the prescribed quality requirements or be the subject of a gas quality approval.

A "gas quality approval" is an approval given by the chief inspector in respect of the quality of any fuel gas. This approval can be given by the chief inspector on his own initiative or on application.¹⁵⁸ The chief inspector can only give the approval if satisfied that:

- the quality of the gas is acceptable for supply to consumers; and
- either:
 - (a) the approval is necessary to ensure sufficiency of gas supply to the relevant consumers; or
 - (b) it is impractical or dangerous to stop the supply to allow gas of the prescribed quality to be supplied; or
 - (c) it is impractical to seek approval from the relevant consumers.¹⁵⁹

Apart from quality, Chapter 7 also regulates gas characteristics. It states that a person who supplies fuel gas must ensure the gas is reasonably free of:

- any liquids;
- substances that are toxic to persons or corrosive to pipelines, gas systems or gas containers.¹⁶⁰

It would not be permissible to inject hydrogen or biogas into an existing gas distribution network unless the resultant mixture complied with the required gas characteristics under Chapter 7.

Chapter 9 regulates safety and applies to "operating plant", which includes "distribution pipelines" and "distribution systems".¹⁶¹

¹⁵⁵ *Petroleum and Gas (Production and Safety) Regulation 2004*, reg 8(1).

¹⁵⁶ *Petroleum and Gas (Production and Safety) Regulation 2004*, reg 8(1)(a).

¹⁵⁷ *Petroleum and Gas (Production and Safety) Regulation 2004*, reg 8(1)(b).

¹⁵⁸ *Petroleum and Gas (Production and Safety) Act 2004*, s 622.

¹⁵⁹ *Petroleum and Gas (Production and Safety) Act 2004*, s 623.

¹⁶⁰ *Petroleum and Gas (Production and Safety) Act 2004*, s 626.

¹⁶¹ *Petroleum and Gas (Production and Safety) Act 2004*, s 670(2)(e) and (f). A "distribution pipeline" includes a pipeline which distributes "fuel gas" as part of a reticulation system (see section 16A, *Petroleum and Gas (Production and Safety) Act 2004*). A "distribution system" is "... a system of distribution pipelines and meters and other equipment used for, or in connection

Chapter 9 requires the operator of operating plant to make a safety management system for the operating plant and to implement and maintain that system.¹⁶²

The operator of a distribution pipeline or distribution system could not inject hydrogen or biogas into the pipeline or system if that results in non-compliance with the safety management system.¹⁶³

In fact, the injection of hydrogen or biogas into a distribution pipeline or system may impose an obligation on the operator to revise the safety management system if it is appropriate to do so.¹⁶⁴

Chapter 9 requires each person at an operating plant to take all reasonable and necessary action to ensure no person or property is exposed to more than an acceptable level of risk.¹⁶⁵

Chapter 9 makes it an offence for a person at an operating plant to wilfully or recklessly do an act that might adversely affect the safety of anyone at the plant.¹⁶⁶ An operator of a distribution network could not inject hydrogen or biogas into that network if the injection might adversely affect safety of anyone at the plant.

Chapter 9 gives the chief inspector power to issue safety instructions, which are directions requiring a person to do something or not do something.¹⁶⁷ The operator of a distribution system could not inject hydrogen or biogas into a network where that was contrary to a safety direction.¹⁶⁸

Comment on application of the *Petroleum and Gas (Production and Safety) Act 2004* to a pure hydrogen/biogas network

For the purposes of the *Petroleum and Gas (Production and Safety) Act 2004* (Qld), “fuel gas” includes both hydrogen and biogas. Consequently, a pure hydrogen or biogas network would be regulated under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld) in the same way as a natural gas distribution network and would need to comply with the same requirements.¹⁶⁹

with, the supply of fuel gas to more than 1 consumer in a fuel gas market...” (see Schedule 2, *Petroleum and Gas (Production and Safety) Act 2004*).

¹⁶² *Petroleum and Gas (Production and Safety) Act 2004*, s 674.

¹⁶³ *Petroleum and Gas (Production and Safety) Act 2004*, ss 677 and 702.

¹⁶⁴ *Petroleum and Gas (Production and Safety) Act 2004*, s 678.

¹⁶⁵ *Petroleum and Gas (Production and Safety) Act 2004*, s 699. Section 700 defines an “acceptable level of risk”.

¹⁶⁶ *Petroleum and Gas (Production and Safety) Act 2004*, s 704.

¹⁶⁷ *Petroleum and Gas (Production and Safety) Act 2004*, s 708B. “Safety requirements” must be published in the Gazette – section 708B(7)

¹⁶⁸ *Petroleum and Gas (Production and Safety) Act 2004*, s 708B(10).

¹⁶⁹ Some of these requirements (but not all of them) are mentioned in the previous answer. Other requirements include (but are not limited to) odourisation – see sections 627 and 628, *Petroleum*

Other comments
None.

and Gas (Production and Safety) Act 2004 and reg 9, Petroleum and Gas (Production and Safety) Regulation 2004.

Petroleum and Gas (Production and Safety) Regulation 2004 (Qld)

Introduction

The *Petroleum and Gas (Production and Safety) Regulation 2004 (Qld)* is a regulation made under the *Petroleum and Gas (Production and Safety) Act 2004*¹⁷⁰.

The *Petroleum and Gas (Production and Safety) Regulation 2004*:

- (a) prescribes mandatory and preferred safety requirements;¹⁷¹
- (b) prescribes quality for fuel gas;¹⁷²
- (c) prescribes odour for fuel gas;¹⁷³
- (d) specifies safety requirements and other requirements for safety management systems.¹⁷⁴

Chapter 5 of the *Petroleum and Gas (Production and Safety) Regulation 2004* contains safety requirements and other requirements applicable to fuel gas network operators.

Relevant definitions

None.

Is it permissible under the *Petroleum and Gas (Production and Safety) Regulation 2004* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Petroleum and Gas (Production and Safety) Regulation 2004* which prohibits the injection of hydrogen or biogas into an existing distribution network.

The *Petroleum and Gas (Production and Safety) Act 2004* contemplates that a regulation may make safety requirements¹⁷⁵ and makes it an offence for a person to fail to comply with the safety requirements.¹⁷⁶

¹⁷⁰ We reviewed the current version of the *Petroleum and Gas (Production and Safety) Regulation 2004 (Qld)*, which is the reprint current from 1 September 2017.

¹⁷¹ *Petroleum and Gas (Production and Safety) Regulation 2004*, r 7.

¹⁷² *Petroleum and Gas (Production and Safety) Regulation 2004*, r 8.

¹⁷³ *Petroleum and Gas (Production and Safety) Regulation 2004*, r 9.

¹⁷⁴ *Petroleum and Gas (Production and Safety) Regulation 2004*, Part 2 and Part 3.

The *Petroleum and Gas (Production and Safety) Regulation 2004* prescribe safety requirements for various activities in Schedule 1. These safety requirements are divided into two categories, namely:

- (a) mandatory standards – where compliance is mandatory;¹⁷⁷ and
- (b) preferred standards – where non-compliance is permitted but only where the chief inspector has been given notice of the non-compliance and there is written evidence showing that the level of risk is equal to or less than the level of risk from compliance.¹⁷⁸

For fuel gas distribution, the standards in Schedule 1 include AS 4645 ‘Gas distribution network management’ as a preferred standard (as distinct from a mandatory standard).¹⁷⁹

A gas distribution network operator would need to ensure that:

- the injection of hydrogen or biogas into the network complied with AS4645 and the other standards in Schedule 1; or
- in the event of non-compliance, notice is given to the chief inspector and there is written evidence to demonstrate that the level of risk is or will be equal to or less than the level of risk from compliance.

Comment on application of the *Petroleum and Gas (Production and Safety) Act 2004* to a pure hydrogen/biogas network

For the purposes of the *Petroleum and Gas (Production and Safety) Act 2004*, “fuel gas” includes both hydrogen and biogas. Consequently, a pure hydrogen or biogas network would be regulated under the *Petroleum and Gas (Production and Safety) Regulation 2004* in the same way as a natural gas distribution network and would need to comply with the same requirements.

Other comments

None.

¹⁷⁵ *Petroleum and Gas (Production and Safety) Act 2004*, s 669.

¹⁷⁶ *Petroleum and Gas (Production and Safety) Act 2004*, s 700.

¹⁷⁷ *Petroleum and Gas (Production and Safety) Regulation 2004*, r 7(3).

¹⁷⁸ *Petroleum and Gas (Production and Safety) Regulation 2004*, r 7(4).

¹⁷⁹ *Petroleum and Gas (Production and Safety) Regulation 2004*, Schedule 1, Part 3

Petroleum and Gas (General Provisions) Regulation 2017 (Qld)

Introduction

The *Petroleum and Gas (General Provisions) Regulation 2017* is a regulation made under the *Petroleum and Gas (Production and Safety) Act 2004*¹⁸⁰.

The *Petroleum and Gas (General Provisions) Regulation 2017*:

- (a) prescribes substances that are petroleum and substances that are fuel gas;¹⁸¹
- (b) details reporting requirements;¹⁸²
- (c) regulates records and samples;¹⁸³
- (d) regulates the taking of water;¹⁸⁴
- (e) defines accuracy and metering requirements;¹⁸⁵ and
- (f) provides the fees applicable for the purposes of the Act.¹⁸⁶

Relevant definitions

None.

Is it permissible under the *Petroleum and Gas (General Provisions) Regulation 2017* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Petroleum and Gas (General Provisions) Regulation 2017* which prohibits the injection of hydrogen or biogas into an existing distribution network.

¹⁸⁰ We reviewed the current version of the *Petroleum and Gas (General Provisions) Regulation 2017* (Qld), which is the reprint current as of 1 September 2017.

¹⁸¹ *Petroleum and Gas (General Provisions) Regulation 2004*, regs 5 and 6.

¹⁸² *Petroleum and Gas (General Provisions) Regulation 2004*, Part 3.

¹⁸³ *Petroleum and Gas (General Provisions) Regulation 2004*, Part 4.

¹⁸⁴ *Petroleum and Gas (General Provisions) Regulation 2004*, Part 5.

¹⁸⁵ *Petroleum and Gas (General Provisions) Regulation 2004*, Part 6.

¹⁸⁶ *Petroleum and Gas (General Provisions) Regulation 2004*, Part 7.

Comment on application of the *Petroleum and Gas (General Provisions) Act 2004* to a pure hydrogen/biogas network

For the purposes of the *Petroleum and Gas (General Provisions) Act 2004*, “fuel gas” includes both hydrogen and biogas. Consequently, a pure hydrogen or biogas network would be regulated under the *Petroleum and Gas (General Provisions) Regulation 2017* in the same way as a natural gas distribution network and would need to comply with the same requirements. The relevant requirements concern metering.¹⁸⁷

Other comments

None.

¹⁸⁷ *Petroleum and Gas (General Provisions) Regulation 2004*, regs 58, 60 and 61.

National Energy Retail Law (Queensland) Act 2014 (Qld)

Introduction

The *National Energy Retail Law (Queensland) Act 2014 (Qld)* is a part of the legislative package which establishes the national energy customer framework for the regulation of the retail supply of energy to customers¹⁸⁸.

Amongst other things, the *National Energy Retail Law (Queensland) Act 2014*:

- applies the *National Energy Retail Law* as a law of Queensland;
- applies the *National Energy Retail Regulations* as regulations under the *National Energy Retail Law (Queensland)*;
- authorises the Governor to make regulations;
- describes various arrangements for the implementation of the *National Energy Retail Law* in Queensland;
- modifies the operation of the *National Energy Retail Law* in Queensland; and
- describes various transitional arrangements.

Relevant definitions

None.

Is it permissible under the *National Energy Retail Law (Queensland) Act 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Queensland) Act 2014* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law (Queensland) Act 2014* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Queensland) Act 2014* which would affect the operation of a distribution network with pure hydrogen or biogas.

¹⁸⁸ We reviewed the current version of the *National Energy Retail Law (Queensland) Act 2014 (Qld)*, which is the reprint effective as of 1 July 2015.

Other comments
None.

National Energy Retail Law (Queensland) Regulation 2014 (Qld)

Introduction

The *National Energy Retail Law (Queensland) Regulation 2014* (Qld) is made under the *National Energy Retail Law (Queensland) Act 2014*¹⁸⁹.

Amongst other things, the *National Energy Retail Law (Queensland) Regulation 2014* (Qld):

- specifies the nominated retailers and distributors for the purposes of the *National Energy Retail Law (Queensland) Act 2014*;
- specifies the assigned retailer for the purposes of the *National Energy Retail Law (Queensland) Act 2014*;
- identifies the prescribed regulators;
- prescribes model terms and conditions for retail contracts;
- establishes the price comparator; and
- modifies the application of the *National Energy Retail Rules* in Queensland.

The *National Energy Retail Law (Queensland) Regulation 2014* applies to distributors as defined in the *Gas Supply Act 2003* and the *National Energy Retail Law*.

Relevant definitions

None.

Is it permissible under the *National Energy Retail Law (Queensland) Regulation 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Queensland) Regulation 2014* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law (Queensland) Regulation 2014* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Queensland) Regulation 2014* which

¹⁸⁹ We reviewed the current version of *National Energy Retail Law (Queensland) Regulation 2014* (Qld), which is the reprint effective from 26 January 2018.

would affect the operation of a gas distribution system with pure hydrogen or biogas.

Other comments

None.

National Gas (Queensland) Act 2008 (Qld)

Introduction

The *National Gas (Queensland) Act 2008* (Qld) establishes a framework to enable third parties to gain access to certain natural gas pipeline services, amongst other things. It applies the *National Gas Law* as a law of Queensland¹⁹⁰.

Relevant definitions

There are no relevant definitions.

Is it permissible under the *National Gas (Queensland) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (Queensland) Act 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (Queensland) Act 2008* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (Queensland) Act 2008* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

¹⁹⁰ We reviewed the current version of the *National Gas (Queensland) Act 2008* (Qld), which is the reprint effective from 1 July 2015.

National Gas (Queensland) Regulation 2014 (Qld)

Introduction

The *National Gas (Queensland) Regulation 2014 (Qld)* is made under the *National Gas (Queensland) Act 2008 (Qld)*¹⁹¹.

The *National Gas (Queensland) Regulation 2014 (Qld)* nominates Australian Gas Networks Limited as the nominated distributor for the Maryborough-Hervey Bay Distribution Network and the Bundaberg Distribution Network for the purposes of section 8A of the *National Gas Law*.

The *National Gas (Queensland) Regulation 2014* also modifies Part 12A of the *National Gas Rules* and provides for transitional provisions.

Relevant definitions

There are no relevant definitions.

Is it permissible under the *National Gas (Queensland) Regulation 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (Queensland) Regulation 2014* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (Queensland) Regulation 2014* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (Queensland) Regulation 2014* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

¹⁹¹ We reviewed the current version of the *National Gas (Queensland) Regulation 2014 (Qld)*, which is the reprint effective from 1 July 2015.

Retail Market Procedures (Queensland)

Introduction

The *Retail Market Procedures (Queensland)*¹⁹² are made pursuant to the *National Gas Law*.¹⁹³ The Retail Market Procedures regulate the retail gas market.¹⁹⁴ Amongst other things, the Retail Market Procedures:

- establish the meter data database and regulate meter reading;
- establish and regulate the MIRN database;
- establish customer transfer processes; and
- provide for balancing and settlement.

Relevant definitions

For the purposes of the *Retail Market Procedures (Queensland)*, “gas” has the meaning given to “natural gas” in the *National Gas Law*.¹⁹⁵

Under the *National Gas Law*, “natural gas” means a substance that –

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption.¹⁹⁶

Pure hydrogen is not “natural gas” for the purposes of the *Retail Market Procedures (Queensland)* because pure hydrogen does not consist of hydrocarbons.

Biogas might or might not constitute “natural gas” for the purposes of the *Retail Market Procedures (Queensland)*, depending on whether or not the biogas in question falls within the definition of

¹⁹² *Retail Market Procedures (Queensland)*, version 14.0, effective 31 July 2017.

¹⁹³ See Division 2 of part 7 of the *National Gas Law*. Section 91M of the NGL states that AEMO may make the Retail Market Procedures. Section 91MA states that the Retail Market Procedures are a form of statutory instrument directed at the regulation of a retail gas market – that is, a retail market for “natural gas”.

¹⁹⁴ Section 91L of the National Gas Law states that the retail gas market is constituted by the retail market for “natural gas”.

¹⁹⁵ *Retail Market Procedures (Queensland)*, cl 1.1.1.

¹⁹⁶ *National Gas Law*, s 2.

“natural gas”.¹⁹⁷

Is it permissible under the *Retail Market Procedures (Queensland)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Retail Market Procedures (Queensland)* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *Retail Market Procedures (Queensland)* to a pure hydrogen/biogas network

The *Retail Market Procedures (Queensland)* apply in relation to “natural gas” as defined in the *National Gas Law*.¹⁹⁸

The *Retail Market Procedures (Queensland)* will not apply to a pure hydrogen network or to a network where the principal constituent of the gas is hydrogen (rather than methane). In either case, the gas in the network is not “natural gas” for the purposes of the *Retail Market Procedures (Queensland)* and, hence, the *Retail Market Procedures* do not apply.

Similar comments apply to the operation of a distribution system with biogas that does not meet the definition of “natural gas” under the *National Gas Law*.

Other comments

The *Retail Market Procedures (Queensland)* contain provisions which facilitate the operation of the retail gas market in Queensland.

For the reasons explained above, these provisions will not apply to a pure hydrogen network or to a network that contains biogas (where the biogas is not “natural gas”).

From a legal perspective, this is unlikely to create any significant practical issues where there is a single retailer supplying hydrogen or biogas through the network and there is no need to have mechanisms which facilitate customer transfers or gas balancing and allocation between multiple network users.

However, if it is necessary to accommodate multiple retailers or users in a hydrogen or biogas network, this might be impractical in the absence of the *Retail Market Procedures (Queensland)* or other arrangements which replicate the operation or effect of the *Retail Market Procedures*

¹⁹⁷ We assume that, by definition, “biogas” cannot be LPG because biogas would not comprise more than half propane, propylene (also called propene) or butane.

¹⁹⁸ The provisions in the *Retail Market Procedures (Queensland)* refer to “distribution supply points” which is defined as “... a point on a distribution system at which “gas” is withdrawn ...”. Gas is defined as natural gas within the meaning of the *National Gas Law*.

(Queensland).

SOUTH AUSTRALIAN REGULATORY INSTRUMENTS

Gas Act 1997 (SA)

Introduction

The *Gas Act 1997* regulates the South Australian gas supply industry¹⁹⁹.

The *Gas Act 1997*:

- confers functions and powers on the South Australian Essential Services Commission;
- constitutes the Technical Regulator and defines the functions and powers of the Technical Regulator;
- provides for a consumer advisory committee and a technical advisory committee;
- makes the gas supply industry a regulated industry for the purposes of the *Essential Services Commission Act 2002*;
- regulates the licensing of gas entities;
- gives the Essential Services Commission power over the retail price of gas;
- gives the Minister power to address gas shortages;
- defines the powers and duties of gas officers and gas entities; and
- regulates gas safety and technical standards.

Relevant definition

Gas means a fuel consisting of hydrocarbons or predominantly of hydrocarbons that is in a gaseous or vapour form when it is at the pressure and temperature of its normal pipeline transportation and utilisation conditions, but does not include anything declared by regulation not to be gas.

Is it permissible under the *Gas Act 1997* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Act 1997* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that:

- (a) the injection of hydrogen or biogas does not infringe any technical or safety requirements under the Gas Regulations;²⁰⁰

¹⁹⁹ We reviewed the current version of the *Gas Act 1997* (SA), which is version 17.10.2017.

- (b) it is safe to do inject the hydrogen or biogas into the network; and
(c) the network can be operated safely after the hydrogen or biogas is injected.

As regards paragraph (a), the technical and safety requirements of the Gas Regulations are discussed below.

As regards paragraphs (b) and (c), the *Gas Act 1997* states that a person who owns or operates gas infrastructure must take reasonable steps to ensure that the infrastructure is safe and safely operated.²⁰¹

The effect is that a network owner or operator could not inject hydrogen or biogas into a South Australian gas distribution network if it is unsafe to inject the hydrogen or biogas into the network or the network cannot be operated safely after hydrogen or biogas is injected into the network.

A failure to comply with these requirements is a criminal offence with a maximum penalty of \$250,000 per offence. In the case of a body corporate, directors can be held liable for the offence.²⁰²

Comment on application of *Gas Act 1997* to a pure hydrogen/biogas network

For the purposes of the *Gas Act 1997*, “gas” is defined as a fuel consisting of hydrocarbons or predominantly of hydrocarbons.²⁰³

Pure hydrogen is not “gas” within the meaning of the *Gas Act 1997* because pure hydrogen is not a hydrocarbon and does not contain hydrocarbons. If a network contained pure hydrogen, the *Gas Act 1997* would not apply to that network.

If the *Gas Act 1997* did not apply to a network, this would have a number of significant implications:

- the operator of the network would not be required to hold a licence under the *Gas Act 1997* to operate that network;²⁰⁴

²⁰⁰ *Gas Act 1997* (SA), s 55(1)(a) – see below for discussion of Gas Regulations.

²⁰¹ *Gas Act 1997* (SA), s 55(1)(b).

²⁰² *Gas Act 1997* (SA), s 89.

²⁰³ *Gas Act 1997* (SA), s 4(1) states that “gas means a fuel consisting of hydrocarbons or predominantly of hydrocarbons that is in gaseous or vapour form when it is at the pressure and temperature of its normal pipeline transportation and utilisation conditions, but does not include anything declared by regulation not to be gas.” Regulation 5(4) of the *Gas Regulations 2012* (SA) states that “gas” does not include gas that has not been processed to make it suitable for general consumption.

²⁰⁴ *Gas Act 1997* (SA), s 19(c) states that the regulations may require a licence for other operations and this might make it possible for the regulations to require a licence for the operation of a pure hydrogen network. However, in our opinion, we doubt that regulations of this nature could be valid as a matter of law given the objects of the *Gas Act 1997* which relate to “gas” as defined in the *Gas Act*.

- the common law doctrine of fixtures will apply, such that the network would become part of the land on which it is situated and the owner of the network would lose ownership of the network;²⁰⁵
- the network would not be protected from seizure in execution of an unsatisfied judgment;²⁰⁶
- the network operator would not have the power to compulsorily acquire land;²⁰⁷
- the network operator would not have the power to carry out works on public land for the distribution or supply of gas;²⁰⁸
- the network operator would have no power to appoint “gas officers” with rights of entry, rights to disconnect supply and other rights under the *Gas Act 1997*;²⁰⁹
- the network operator would lose the statutory immunity which protects the network operator from liability where gas is cut off to avert danger;²¹⁰
- the network would not be subject to technical or safety requirements under the *Gas Act 1997*;²¹¹
- the network operator would not have an exemption from Council rates for its network;²¹²
- there will be no criminal offences of unlawful interference with the network or unlawful abstraction or diversion of gas;²¹³ and
- third parties will not have a statutory obligation to give notice to the network operator of work near gas infrastructure.²¹⁴

In practical terms, these consequences mean that it is probably impractical from a legal perspective to operate a pure hydrogen network without new legislation which extends the operation of the *Gas Act 1997* to pure hydrogen networks or establishes a new regulatory framework for hydrogen networks.

²⁰⁵ *Gas Act 1997* (SA), s 35.

²⁰⁶ *Gas Act 1997* (SA), s 36.

²⁰⁷ *Gas Act 1997* (SA), s 46.

²⁰⁸ *Gas Act 1997* (SA), s 47.

²⁰⁹ *Gas Act 1997* (SA), ss 48 – 52, 79, 80.

²¹⁰ *Gas Act 1997* (SA), s 53.

²¹¹ *Gas Act 1997* (SA), ss 55 - 58.

²¹² *Gas Act 1997* (SA), s 78B.

²¹³ *Gas Act 1997* (SA), ss 81, 82.

²¹⁴ *Gas Act 1997* (SA), s 83.

Similar comments apply to a network which comprises biogas where that biogas does not consist predominantly of hydrocarbons (and, therefore, the biogas is not “gas” within the meaning of the *Gas Act 1997*).

Notably, for the purposes of the *Gas Act 1997*, “gas” does not include gas that has not been processed to make it suitable for general consumption.²¹⁵

Consequently, if a network contained biogas which has not been processed to make it suitable for general consumption, the *Gas Act 1997* would not apply to that network.

Other comments

Section 37(1) of the *Gas Act 1997* gives the Minister power to give directions to a gas entity or network operator when the volume of gas available for supply through a distribution system is insufficient (or likely to become insufficient) to meet the requirements of customers who draw gas from that system. This section gives the Minister power to deal with gas shortages and to impose gas rationing.

Section 37(2) states that Ministerial directions may relate to the quantity of gas or the quality of gas.

Section 37 is notable because:

- (c) the section would empower the Minister to direct a gas entity to inject hydrogen or biogas into a network where that might ensure the most efficient and appropriate use of the available gas;²¹⁶ and
- (d) taken literally, the section might empower the Minister to prevent the injection of hydrogen or biogas into a gas network where the resultant mixture no longer constitutes “gas” within the meaning of the *Gas Act 1997*.

²¹⁵ *Gas Act 1997* (SA), s 4; *Gas Regulations 2012* (SA), r 5(4).

²¹⁶ *Gas Act 1997* (SA), s 37(1)(a).

Gas Regulations 2012 (SA)

Introduction

The *Gas Regulations 2012 (SA)* are the detailed regulations under the *Gas Act 1997*²¹⁷.

The Regulations regulate:

- the functions and powers of the Essential Services Commission;
- licensing under the *Gas Act 1997*;
- the Retailer Energy Efficiency Scheme;
- safety and technical issues;
- gas fitting work;
- reporting and investigation of accidents.

Relevant definition

Natural gas has the same meaning as in AS 4564.

Is it permissible under the *Gas Regulations 2012* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in *the Gas Regulations 2012* which prohibits the injection of hydrogen or biogas into an existing distribution network provided that:

- (a) it is safe to inject hydrogen or biogas into the network in the relevant gas service conditions and physical environment;²¹⁸
- (b) the injection of hydrogen or biogas complies with the applicable requirements of AS/NZS 4645, AS/NZS 1596 or AS2885 (or the Technical Regulator is satisfied that it achieves the same or better safety and technical outcomes);²¹⁹
- (c) the resulting gas mixture is safe for the purposes of the gas distribution system;²²⁰

²¹⁷ We reviewed the current version of the *Gas Regulations 2012 (SA)*, which is version 1.1.2017.

²¹⁸ *Gas Regulations 2012 (SA)*, r 37(1)(a).

²¹⁹ *Gas Regulations 2012 (SA)*, r 37 (1)(a).

²²⁰ *Gas Regulations 2012 (SA)*, r 38(1)(a)(i).

- (d) the resulting gas mixture contains sufficient odorant to have a distinctive smell to a person with a normal sense of smell at one-fifth of the lower explosive limit in air;²²¹
- (e) the resulting gas mixture complies with the gas specifications set out in Schedule 2 to the Gas Regulations (or as otherwise agreed between the gas distribution system operator and the Technical Regulator);²²²
- (f) the resulting gas mixture will be suitable for supply to gas installations which will be connected to the distribution system;²²³ and
- (g) the injection of hydrogen or biogas does not result in any non-compliance with a safety, reliability, maintenance and technical management plan approved by the Technical Regulator in relation to the relevant gas distribution system.²²⁴

Comment on application of *Gas Regulations 2012* to a pure hydrogen/biogas network

For the purposes of the *Gas Regulations 2012*, the term “gas” has the same meaning as in the *Gas Act 1997*.²²⁵

If hydrogen or biogas is not “gas” within the meaning of the *Gas Act 1997*, then hydrogen or biogas is also not “gas” for the purposes of the *Gas Regulations 2012*.

The *Gas Regulations 2012* will not apply to a network which contains pure hydrogen or biogas which is not gas within the meaning of the *Gas Act 1997*.

If the *Gas Regulations 2012* do not apply to a network, the operator of that network will not need to comply with the *Gas Regulations 2012* and, in particular, will not need to comply with regulation 38, which regulates the quality of the gas within the network and requires compliance with the gas specifications in Schedule 2.

As noted in the discussion on the *Gas Act 1997*, it is probably impractical from a legal perspective to operate a pure hydrogen or biogas network without new legislation which extends the operation of the *Gas Act 1997* to the network or establishes a new regulatory framework for the network.

²²¹ *Gas Regulations 2012* (SA), r 38(1)(a)(ii).

²²² *Gas Regulations 2012* (SA), r 38(1)(a)(iii).

²²³ *Gas Regulations 2012* (SA), r 38(1)(b).

²²⁴ *Gas Regulations 2012* (SA), r 49.

²²⁵ *Acts Interpretation Act 1915* (SA), s 14.

Other comments
None.

Gas Distribution Code

Introduction

The *Gas Distribution Code* is an industry code made by the Essential Services Commission of South Australia (**ESCOSA**) under section 28 of the *Essential Services Commission Act 2002*²²⁶.

It contains provisions related to the operation of gas distribution systems in South Australia.

Relevant definition

“Gas” has the same meaning as in the *Gas Act 1997* (SA).

Is it permissible under the *Gas Distribution Code* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution Code* that prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of *Gas Distribution Code* to a pure hydrogen/biogas network

The *Gas Distribution Code* will not apply to a pure hydrogen network or to a network which contains biogas where the biogas does not fall within the definition of “gas” under the *Gas Act 1997*. This is because:

- (a) the Code applies to “distribution systems” and binds persons who hold a licence under the *Gas Act 1997* to operate a “distribution system”;²²⁷
- (b) for the purposes of the Code, the term “distribution systems” has the same meaning as in the *Gas Act 1997*;²²⁸
- (c) under the *Gas Act 1997*, a “distribution system” is a system of pipes and equipment for the distribution and supply of “gas”;²²⁹ and

²²⁶ We reviewed the current version of the Gas Distribution Code, which is GD/06, effective 5 September 2013.

²²⁷ *Gas Distribution Code*, cl 1.4.

²²⁸ *Gas Distribution Code*, Sch 1.

(d) for the purposes of the *Gas Act 1997*, “gas” does not include hydrogen or biogas where the biogas does not consist predominantly of hydrocarbons or the biogas has not been processed to make it suitable for general consumption.

As noted in the discussion on the *Gas Act 1997*, it is probably impractical from a legal perspective to operate a pure hydrogen or biogas network without new legislation which extends the operation of the *Gas Act 1997* to the network or establishes a new regulatory framework for the network.

Other comments

None.

²²⁹ *Gas Act 1997 (SA)*, s 4(1).

National Gas (South Australia) Act 2008 (SA)

Introduction

The *National Gas (South Australia) Act 2008 (SA)* is the legislation which applies the *National Gas Law* as a law of South Australia²³⁰.

The *National Gas (South Australia) Act 2008* contains the legal machinery associated with the *National Gas Law*. Amongst other things, the Act:

- empowers the Governor to make regulations for the purposes of the National Gas Law;
- provides for the cross-vesting of powers to the Australian Energy Regulator, the National Competition Council and the Australian Competition Tribunal;
- regulates cross-boundary pipelines;
- provides for the transition from REMCo to AEMO; and
- validates certain steps taken by the AER in preparation for the National Gas Law.

Relevant definition

See *National Gas Law*.

Is it permissible under the *National Gas (South Australia) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (South Australia) Act 2008* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Gas (South Australia) Act 2008* to a pure hydrogen/biogas network

The *National Gas (South Australia) Act 2008* contains the legal machinery associated with the *National Gas Law*. It does not contain provisions regulating the operation of gas networks.

Other comments

See review of the *National Gas Law*.

²³⁰ We reviewed the current version of the *National Gas (South Australia) Act 2008*, which is version 1.8.2017.

National Gas (South Australia) Regulations (SA)

Introduction

The *National Gas (South Australia) Regulations (SA)* are regulations made under Part 3 of the *National Gas (South Australia) Act 2008*²³¹.

Amongst other things, the *National Gas (South Australia) Regulations*:

- define designated pipelines for the purposes of the *National Gas Law*;
- identify the civil penalty provisions and conduct provisions for the purposes of the *National Gas Law*;
- describe the requirements for summonses issued by the AER;
- prescribe the maximum amount of AEMO's civil monetary liability;
- prescribe classes of retail market participation;
- define small to medium user or end user; and
- specify the initial registered participants for the Victorian declared wholesale gas market and for the regulated retail markets in the Australian Capital Territory, Mildura, New South Wales, Queensland, South Australia and Victoria.

Relevant definition

None.

Is it permissible under the *National Gas (South Australia) Regulations* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (South Australia) Regulations* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Gas (South Australia) Regulations* to a pure hydrogen/biogas network

The *National Gas (South Australia) Regulations* do not contain any provisions which would affect a pure hydrogen or biogas network.

²³¹ We reviewed the current version of the *National Gas (South Australia) Regulations (SA)*, which is version 19.12.2017.

Other comments
None.

National Energy Retail Law (South Australia) Act 2011 (SA)

Introduction

The *National Energy Retail Law (South Australia) Act 2011 (SA)* is the legislation which establishes the national energy customer framework for the regulation of the retail supply of energy to customers²³².

Amongst other things, the *National Energy Retail Law (South Australia) Act 2011*:

- applies the *National Energy Retail Law* as a law of South Australia;
- applies the *National Energy Retail Regulations* as regulations under the *National Energy Retail Law (South Australia)*;
- authorises the Governor to make regulations;
- authorises the Minister to make rules;
- describes various arrangements for the implementation of the *National Energy Retail Law* in South Australia; and
- specifies various transitional arrangements.

Relevant definition

Gas means natural gas within the meaning of the *National Gas Law*.

Is it permissible under the *National Energy Retail Law (South Australia) Act 2011* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (South Australia) Act 2011* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law (South Australia) Act 2011* to a pure hydrogen/biogas network

The *National Energy Retail Law (South Australia) Act 2011* does not contain any provisions which would affect a pure hydrogen or biogas network.

²³² We reviewed the current version of the *National Energy Retail Law (South Australia) Act 2011 (SA)*, which is version 28.11.2013.

Other comments
None.

National Energy Retail Law (Local Provisions) Regulations 2013 (SA)

Introduction

The *National Energy Retail Law (Local Provisions) Regulations 2013 (SA)* are the local regulations for the purposes of the *National Energy Retail Law*²³³.

Amongst other things, the Regulations:

- determine the upper consumption thresholds for business customers;
- nominate local area retailers;
- imposes minimum service standards for retailers; and
- declares extreme weather events.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (Local Provisions) Regulations 2013* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Local Provisions) Regulations 2013* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Energy Retail Law (Local Provisions) Regulations 2013* to a pure hydrogen/biogas network

The *National Energy Retail Law (Local Provisions) Regulations 2013* do not contain any provisions which would affect a pure hydrogen or biogas network.

Other comments

None.

²³³ We reviewed the current version of the *National Energy Retail Law (Local Provisions) Regulations 2013 (SA)*, which is version 15.1.2015.

Retail Market Procedures (South Australia)

Introduction

The *Retail Market Procedures (South Australia)*²³⁴ are made pursuant to the *National Gas Law*²³⁵. The Retail Market Procedures regulate the retail gas market.²³⁶ Amongst other things, the Retail Market Procedures:

- establish the AEMO registry and the MIRN database;
- regulate MIRN transactions;
- establish customer transfer processes;
- provides for the disconnection and reconnection of delivery points;
- provides for the removal of delivery points and the deregistration of the associated MIRNs;
- regulates metering; and
- provides for allocation and reconciliation of gas.

Relevant definition

For the purposes of the *Retail Market Procedures (South Australia)*, “gas” has the meaning given to “natural gas” in the *National Gas Law*²³⁷.

Under the *National Gas Law*, “natural gas” means a substance that –

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption.²³⁸

Pure hydrogen is not “natural gas” for the purposes of the *Retail Market Procedures (South*

²³⁴ *Retail Market Procedures (South Australia)*, version 11, effective 31 July 2017.

²³⁵ See Division 2 of part 7 of the *National Gas Law*. Section 91M of the NGL states that AEMO may make the Retail Market Procedures. Section 91MA states that the Retail Market Procedures are a form of statutory instrument directed at the regulation of a retail gas market – that is, a retail market for “natural gas”.

²³⁶ Section 91L of the National Gas Law states that the retail gas market is constituted by the retail market for “natural gas”.

²³⁷ *Retail Market Procedures (South Australia)*, clause 2.

²³⁸ *National Gas Law*, s 2.

Australia) because pure hydrogen does not consist of hydrocarbons.

Biogas might or might not constitute “natural gas” for the purposes of the *Retail Market Procedures (South Australia)*, depending on whether or not the biogas in question falls within the definition of “natural gas”.²³⁹

Is it permissible under the Retail Market Procedures (South Australia) to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Retail Market Procedures (South Australia)* which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the Retail Market Procedures (South Australia) to a pure hydrogen/biogas network

The *Retail Market Procedures (South Australia)* apply to persons who are required to register to participate in the regulated retail gas market of South Australia.²⁴⁰ These persons include:

- (a) network operators – that is, persons who are participating in the retail gas market of South Australia²⁴¹; and
- (b) users – that is, persons who have contracts for the haulage of gas through a sub-network²⁴².

The *Retail Market Procedures (South Australia)* regulate “delivery points”, which are points at which gas is delivered out of a sub-network to a user. The concept of “gas” is central to the *Retail Market Procedures (South Australia)*.

The *Retail Market Procedures (South Australia)* will not apply to a pure hydrogen network or to a network where the principal constituent of the gas is hydrogen (rather than methane). In either case, the gas in the network is not “gas” for the purposes of the *Retail Market Procedures (South Australia)* and, hence, the *Retail Market Procedures* do not apply.

Similar comments apply to the operation of a distribution system with biogas that does not meet the definition of “natural gas” under the National Gas Law.

²³⁹ We assume that, by definition, “biogas” cannot be LPG because biogas would not comprise more than half propane, propylene (also called propene) or butane.

²⁴⁰ *Retail Market Procedures (South Australia)*, clause 1(2).

²⁴¹ See the definition of “network operator” in *Retail Market Procedures (South Australia)*, clause 1(2).

²⁴² See the definition of “user” in *Retail Market Procedures (South Australia)*, clause 1(2).

Other comments

The *Retail Market Procedures (South Australia)* contain provisions which facilitate the operation of the retail gas market in South Australia.

For the reasons explained above, these provisions will not apply to a pure hydrogen network or to a network that contains biogas (where the biogas is not “natural gas”).

From a legal perspective, this is unlikely to create any significant practical issues where there is a single retailer supplying hydrogen or biogas through the network and there is no need to have mechanisms which facilitate customer transfers or gas allocation between multiple network users.

However, if it is necessary to accommodate multiple retailers or users in a hydrogen or biogas network, this might be impractical in the absence of the *Retail Market Procedures (South Australia)* or other arrangements which replicate the operation or effect of the *Retail Market Procedures (South Australia)*.

TASMANIAN REGULATORY INSTRUMENTS

Gas Act 2000 (Tas)

Introduction

The *Gas Act 2000* (Tas) establishes the Director of Gas, the Director of Gas Safety, and a scheme for licensing, gas standards and codes²⁴³.

Relevant definition

Gas means –

- (a) natural gas; or
- (b) liquefied petroleum gas; or
- (c) any other gaseous fuel, being a gaseous fuel that is not declared by the regulations to be excluded from the operation of the Act²⁴⁴.

Natural gas means a substance:

- (a) which is in a gaseous state at standard temperature and pressure and which consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (b) which has been processed to be suitable for consumption,

but does not include anything declared by the regulations not to be natural gas²⁴⁵.

For the purposes of the *Gas Act 2000* (Tas), “hydrogen” and “biogas” would both constitute “gas” where they are gaseous fuels.

²⁴³ We reviewed the current version of the *Gas Act 2000* (Tas), which is the version current from 1 January 2016.

²⁴⁴ *Gas Act 2000* (Tas), s3. There are no relevant regulations which exclude any gaseous fuel from the operation of the *Gas Act 2000* (Tas).

²⁴⁵ *Gas Act 2000* (Tas), s3. There are no relevant regulations which exclude any substance to not be natural gas for the purposes of the *Gas Act 2000* (Tas).

Is it permissible under the *Gas Act 2000* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Act 2000* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that the injection does not:

- (a) infringe any licence conditions;²⁴⁶ or
- (b) infringe any technical and safety requirements imposed under the regulations;²⁴⁷ or
- (c) infringe on the general obligation to operate the network safely;²⁴⁸ or
- (d) infringe on the requirement that the gas supplied in the network meets the prescribed standards of quality;²⁴⁹
- (e) on the requirement that the gas is not supplied when it is knowingly unsafe;²⁵⁰ or
- (f) infringe on any obligations contained in any accepted safety and operating plan.²⁵¹

Comment on application of the *Gas Act 2000* to a pure hydrogen/biogas network

The definition of “gas”²⁵² in the *Gas Act 2000* will include hydrogen and biogas unless they are excluded by regulation from the operation of the *Gas Act 2000*. There are currently no regulations which exclude hydrogen or biogas from the operation of the *Gas Act 2000*.

Other comments

None.

²⁴⁶ *Gas Act 2000* (Tas), s 32. A breach of a licence condition is an offence which carries a fine of up to 500 penalty units (\$79,500 for 2017/18 FY), and 100 penalty units (\$15,900 for 2017/18 FY) for each day the offence is subsisting (s 32).

²⁴⁷ *Gas Act 2000* (Tas), s 50(1)(a).

²⁴⁸ *Gas Act 2000* (Tas), s 50(1)(b).

²⁴⁹ *Gas Act 2000* (Tas), s 51 and see discussion below regarding the *Gas (Safety) Regulations 2014* (Tas) for details of the prescribed standards of quality.

²⁵⁰ *Gas Act 2000* (Tas), s 52.

²⁵¹ *Gas Act 2000* (Tas), s 61. A breach of this section carries a penalty of up to 1,500 penalty units (\$238,500 for 2017/18 FY).

²⁵² *Gas Act 2000* (Tas), s 3(1).

Gas (Safety) Regulations 2014 (Tas)

Introduction

The *Gas (Safety) Regulations 2014 (Tas)* are made pursuant to the *Gas Act 2000* and establish standards and requirements primarily related to safety²⁵³.

Relevant definition

None.

Is it permissible under the *Gas (Safety) Regulations 2014* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

The *Gas (Safety) Regulations 2014 (Tas)* do not expressly prohibit the injection of hydrogen or biogas into an existing gas distribution network. However, a gas entity could not inject hydrogen or biogas into an existing gas distribution network unless:

- (a) the gas is safe in all respects for the purposes of the distribution system²⁵⁴;
- (b) the gas will comply with the specifications set out in regulation 9(2) of the *Gas (Safety) Regulations 2014 (Tas)* – which specifies limits for the Wobbe Index and for oxygen, hydrogen sulphide, total sulphur, water content, hydrocarbon dewpoint and total inerts; and
- (c) the gas entity has obtained the approval of the Director for any alteration in the prescribed characteristics of the gas supplied by the gas entity²⁵⁵.

²⁵³ We reviewed the current version of the *Gas (Safety) Regulations 2014 (Tas)*, which is the version current from 30 June 2014.

²⁵⁴ *Gas (Safety) Regulations 2014 (Tas)*, r9(1).

²⁵⁵ *Gas (Safety) Regulations 2014 (Tas)*, r12(1).

Comment on application of the *Gas (Safety) Regulations 2014* to a pure hydrogen/biogas network

For the purposes of the *Gas Act 2000* (Tas), “hydrogen” and “biogas” would both constitute “gas” where they are gaseous fuels. The *Gas (Safety) Regulations 2014* will apply to a pure hydrogen/biogas network in the same way as they apply to a natural gas network. In particular, the gas in a hydrogen or biogas network will need to meet the specifications and requirements described above.

Other comments

None.

Tasmanian Gas Distribution Code

Introduction

The *Tasmanian Gas Distribution Code* sets out the minimum standards and obligations with respect to the operation and maintenance of a distribution system, and the provision of distribution services²⁵⁶.

Relevant definition

“Gas” is defined in the *Gas Act 2000* (Tas). For the purposes of the *Gas Act 2000* (Tas), “gas” means –

- (a) natural gas; or
- (b) liquefied petroleum gas; or
- (c) any other gaseous fuel, being a gaseous fuel that is not declared by the regulations to be excluded from the operation of the Act²⁵⁷.

Is it permissible under the *Tasmanian Gas Distribution Code* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Tasmanian Gas Distribution Code* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Tasmanian Gas Distribution Code* to a pure hydrogen/biogas network

There are no provisions in the *Tasmanian Gas Distribution Code* which would affect the operation of a distribution system with pure hydrogen or biogas.

Other comments

²⁵⁶ We reviewed the current version of the *Tasmanian Gas Distribution Code*, which is version 6, effective 19 October 2017.

²⁵⁷ *Gas Act 2000* (Tas), s3. There are no relevant regulations which exclude any gaseous fuel from the operation of the *Gas Act 2000* (Tas).

None.

Gas (Distribution System) Order 2001 (Tas)

Introduction

The *Gas (Distribution System) Order 2001 (Tas)* is made pursuant to the *Gas Act 2000*.²⁵⁸

The *Gas (Distribution System) Order 2001 (Tas)* declares certain pipelines to not form part of a distribution system for the purposes of the *Ac*.^{259†}

Relevant definition

None.

Is it permissible under the *Gas (Distribution System) Order 2001* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas (Distribution System) Order 2001* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas (Distribution System) Order 2001* to a pure hydrogen/biogas network

There are no provisions in the *Gas (Distribution System) Order 2001* which would affect the operation of a distribution system with pure hydrogen or biogas.

Other comments

None.

²⁵⁸ *Gas Act 2000 (Tas)*, s 3(3).

²⁵⁹ We reviewed the current version of the *Gas (Distribution System) Order 2001 (Tas)*, which is the version current from 11 June 2003.

National Gas (Tasmania) Act 2008 (Tas)

Introduction

The *National Gas (Tasmania) Act 2008 (Tas)* establishes a framework to enable third party access to certain natural gas pipeline services by applying certain provisions of the *National Gas Law* as a law in Tasmania²⁶⁰.

Relevant definition

None.

Is it permissible under the *National Gas (Tasmania) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (Tasmania) Act 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (Tasmania) Act 2008* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (Tasmania) Act 2008* which would affect the operation of a distribution system with pure hydrogen or biogas.

Other comments

None.

²⁶⁰ We reviewed the current version of the *National Gas (Tasmania) Act 2008*, which is the version current from 1 July 2008.

National Energy Retail Law (Tasmania) Act 2012 (Tas)

Introduction

The *National Energy Retail Law (Tasmania) Act 2012 (Tas)* applies the *National Energy Retail Law* as a law of Tasmania in relation to electricity, and provides for transitional provisions²⁶¹.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (Tasmania) Act 2012 (Tas)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Tasmania) Act 2012 (Tas)* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (Tasmania) Act 2012 (Tas)* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Tasmania) Act 2012 (Tas)* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

²⁶¹ We reviewed the current version of the *National Energy Retail Law (Tasmania) Act 2012 (Tas)*, which is the version effective from 1 June 2013.

National Energy Retail Law (Tasmania) Regulations 2012 (Tas)

Introduction

The *National Energy Retail Law (Tasmania) Regulations 2012 (Tas)* are made pursuant to the *National Energy Retail Law (Tasmania) Act 2012*, and contain provisions related to, amongst other things, prepayment meter systems²⁶².

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (Tasmania) Regulations 2012* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Tasmania) Regulations 2012* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (Tasmania) Regulations 2012* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Tasmania) Regulations 2012* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

²⁶² We reviewed the current version of the *National Energy Retail Law (Tasmania) Regulations 2012*, which is the version effective from 1 January 2014.

National Energy Retail Law (Tasmania) Amendment Regulations 2013 (Tas)

Introduction

The *National Energy Retail Law (Tasmania) Amendment Regulations 2013 (Tas)* amends the Regulations so as to remove Aurora Energy as the local area retailer, remove a transitional provision that is no longer required, and amend certain provisions of the regulations that relate to categories of customers that will cease to exist²⁶³.

Relevant definition

None.

Is it permissible under the *National Energy Retail Law (Tasmania) Amendment Regulations 2013* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Energy Retail Law (Tasmania) Amendment Regulations 2013* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Energy Retail Law (Tasmania) Amendment Regulations 2013* to a pure hydrogen/biogas network

There are no provisions in the *National Energy Retail Law (Tasmania) Amendment Regulations 2013* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

²⁶³ We reviewed the current version of the *National Energy Retail Law (Tasmania) Amendment Regulations 2013*, which is the version effective from 1 January 2014.

VICTORIAN REGULATORY INSTRUMENTS

Gas Industry Act 2001 (Vic)

Introduction

The *Gas Industry Act 2001* (Vic) regulates the Victorian gas industry²⁶⁴.

The *Gas Industry Act 2001*:

- provides for tariff orders to regulate tariffs and charges for gas;
- requires a licence to provide services by means of a distribution pipeline or to sell gas by retail;
- provides broad powers to gas companies in relation to the construction and operation of pipelines; and
- gives the Minister broad powers to act in the case of a gas supply emergency.

Relevant definitions

For the purposes of the *Gas Industry Act 2001*:

- “gas” means any gaseous fuel but does not include any gaseous fuel that is declared under section 8 not to be gas for the purposes of the Act or any provision of the Act; and
- “gaseous fuel” includes petrochemical fuel stock.²⁶⁵

Pursuant to section 8 of the Act, it has been declared that, for the purposes of Parts 3 and 4 of the Act, “gas” does not include any gaseous fuel other than natural gas (as defined in the Act).²⁶⁶

Natural gas means a substance –

- (a) which is in a gaseous state at standard temperature and pressure; and
- (b) which consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons; and

²⁶⁴ We have reviewed the current version of the *Gas Industry Act 2001* (Vic), which is the authorised version (version number 60) incorporating amendments as at 1 January 2016.

²⁶⁵ *Gas Industry Act 2001* (Vic), s 3.

²⁶⁶ Order in Council under section 8 dated 29 October 2002, Government Gazette No. S197 dated 29 October 2002.

(c) the principal constituent of which is methane²⁶⁷.

The effect of these definitions is that:

- for the purposes of Parts 3 and 4 of the *Gas Industry Act 2001*, “gas” means “natural gas” (as defined in the Act); and
- for the purposes of the remainder of the Act, “gas” means any gaseous fuel, including petrochemical feedstock.²⁶⁸

This situation could be readily changed by a new Order in Council varying, amending or repealing the existing declaration under section 8 of the *Gas Industry Act 2001*.

Is it permissible under the *Gas Industry Act 2001* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Industry Act 2001* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that the gas distribution licence does not contain conditions which restrict the injection of hydrogen or biogas.²⁶⁹

Comment on application of the *Gas Industry Act 2001* to a pure hydrogen/biogas network

Parts 3 and 4 of the *Gas Industry Act 2001* will not apply to a pure hydrogen network because, for the purposes of those Parts of the Act:

- (a) “gas” means natural gas (as defined in the Act);
- (b) “natural gas” is a substance which consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons; and
- (c) pure hydrogen does not contain hydrocarbons.²⁷⁰

The other Parts of the *Gas Industry Act 2001* would apply to a pure hydrogen network because, for the purposes of those other Parts of the Act, gas means any gaseous fuel. This would include pure

²⁶⁷ *Gas Industry Act 2001* (Vic), s 3.

²⁶⁸ Part 3 of the *Gas Industry Act 2001* regulates licensing and terms and conditions for the sale and supply of gas. Part 4 contains gas market provisions dealing with the supply of gas by a supplier of last resort.

²⁶⁹ *Gas Industry Act 2001* (Vic), s 28(2) makes a licence subject to such conditions as are determined by the Essential Services Commission established under the *Essential Services Commission Act 2001* (Vic).

²⁷⁰ See discussion above under “Relevant Definitions”.

hydrogen where used as a fuel.

Notably, this means that a pure hydrogen network will have the benefit of Part 7 of the Gas Industry Act 2001. Part 7:

- excludes the application of the fixtures doctrine to a distribution pipeline.²⁷¹
- gives a gas distribution company power to compulsorily acquire land and easements;²⁷²
- provides that land is not occupied land (for the purposes of Council rates) merely because there are pipes on the land for the retail sale of gas;²⁷³
- gives a gas distribution company broad powers to carry out works on any public or private land;²⁷⁴
- gives a gas distribution company powers to open and break up public roads, private roads and bridges;²⁷⁵
- makes it an offence to interfere with the construction or operation of a distribution pipeline or related works;²⁷⁶
- establishes various offences relating to gas supply which are designed to protect the interests of a gas distribution company, such as the offence of unlawfully connecting to a distribution pipeline, unlawfully interfering with a gas meter or fraudulently taking gas;²⁷⁷ and
- gives officers and employees of a gas company broad powers to enter premises.²⁷⁸

A pure hydrogen network would also be subject to Part 9 of the *Gas Supply Act 2001* which gives the Minister power to act in the case of a gas supply emergency.²⁷⁹

A gas distribution company would also have the benefit of the exemption from liability for failure to convey gas through a pure hydrogen network where the failure arises out of any accident or cause beyond the control of the gas distribution company.²⁸⁰

²⁷¹ *Gas Industry Act 2001* (Vic), s 140.

²⁷² *Gas Industry Act 2001* (Vic), ss 142 and 143.

²⁷³ *Gas Industry Act 2001* (Vic), s 145.

²⁷⁴ *Gas Industry Act 2001* (Vic), s 148.

²⁷⁵ *Gas Industry Act 2001* (Vic), s 149.

²⁷⁶ *Gas Industry Act 2001* (Vic), s 150.

²⁷⁷ *Gas Industry Act 2001* (Vic), s 152.

²⁷⁸ *Gas Industry Act 2001* (Vic), ss 155 and 156.

²⁷⁹ *Gas Industry Act 2001* (Vic), s 207.

²⁸⁰ *Gas Industry Act 2001* (Vic), s 233.

Similar comments apply in the case of a biogas network where biogas is a gaseous fuel (as defined in the *Gas Supply Act 2001*).

If biogas is “natural gas” (as defined in the *Gas Supply Act 2001*) then a biogas network would be subject to Parts 3 and 4 of the *Gas Supply Act 2001* (Vic). In that case, the operator of the biogas network would require a licence under the *Gas Supply Act 2001* (Vic) to provide services by means of the network.²⁸¹

Other comments
None.

²⁸¹ *Gas Industry Act 2001* (Vic), s 22.

Gas Safety Act 1997 (Vic)

Introduction

The *Gas Safety Act 1997 (Vic)*²⁸² makes provision for the safe conveyance, sale, supply, measurement, control and use of gas, and regulates gas safety.²⁸³

The *Gas Safety Act 1997* also outlines the functions and objects of Energy Safe Victoria in relation to under the Act.²⁸⁴

Relevant definitions

For the purposes of the *Gas Safety Act 1997 (Vic)*:

- “gas” means any gaseous fuel but does not include any gaseous fuel that is declared under section 4 not to be gas for the purposes of the Act or any provision of the Act; and
- “gaseous fuel” includes petrochemical feed stock.²⁸⁵

As at the date of this report, there have been no declarations under section 4 which exclude any gaseous fuel from the definition of “gas” for the purposes of the *Gas Safety Act 1997*.

Consequently, the *Gas Safety Act 1997* is relevant to any gaseous fuel, whether it is natural gas, hydrogen or biogas or some other gaseous fuel.

Is it permissible under the *Gas Safety Act 1997* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Safety Act 1997* which prohibits the injection of hydrogen or biogas into an existing distribution network. However, under the *Gas Safety Act 1997*:

- a gas company is required to manage and operate its pipelines and other facilities to minimise as far as practicable the hazards and risks to the safety of the public and customers arising from gas;²⁸⁶

²⁸² We have reviewed the current version of the *Gas Safety Act 1997 (Vic)*, which is the authorised version (version number 42) incorporating amendments as at 1 January 2018.

²⁸³ *Gas Safety Act 1997 (Vic)*, s 1.

²⁸⁴ *Gas Safety Act 1997 (Vic)*, Part 2.

²⁸⁵ *Gas Safety Act 1997 (Vic)*, s 3.

- a gas company must ensure as far as practicable that the gas it conveys meets the prescribed standards of quality and complies with any prescribed requirements;²⁸⁷
- a gas company must not knowingly supply gas for use in a gas installation which is unsafe;²⁸⁸ or
- a gas company must comply with the accepted safety case for a pipeline or other facility in relation to the operation and management of the facility.²⁸⁹

Failure to comply with any of these obligations is a criminal offence. A gas company could not lawfully inject hydrogen or biogas into an existing gas network where that will result in non-compliance.

Comment on application of the *Gas Safety Act 1997* to a pure hydrogen/biogas network

The *Gas Safety Act 1997* will apply to a pure hydrogen network or a biogas network in the same way that it applies to a natural gas network. Consequently, the operator of a hydrogen network or a biogas network will need to comply with the obligations described above.

Other comments

No other comments.

²⁸⁶ *Gas Safety Act 1997* (Vic), s 32.

²⁸⁷ *Gas Safety Act 1997* (Vic), s 33. Also see discussion below on *Gas Safety (Gas Quality) Regulations 2007* (Vic).

²⁸⁸ *Gas Safety Act 1997* (Vic), s 34(1).

²⁸⁹ *Gas Safety Act 1997* (Vic), s 44(2).

Gas Safety (Gas Quality) Regulations 2017 (Vic)

Introduction

The *Gas Safety (Gas Quality) Regulations 2017 (Vic)* are regulations made under the *Gas Safety Act 1997 (Vic)*²⁹⁰.

The *Gas Safety (Gas Quality) Regulations 2017* sets out minimum safety standards for:

- (a) the quality of gas; and
- (b) the testing of natural gas conveyed through transmission pipelines.²⁹¹

Relevant Definitions

There are no relevant definitions in the *Gas Safety (Gas Quality) Regulations 2017*.

Is it permissible under the *Gas Safety (Gas Quality) Regulations 2017* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

The *Gas Safety (Gas Quality) Regulations 2017* do not directly prohibit the injection of hydrogen or biogas into an existing gas distribution network.

However, the *Gas Safety (Gas Quality) Regulations 2017* do establish the prescribed standard of quality for “natural gas” and a gas company could not inject hydrogen or biogas into an existing gas distribution network if that were to cause the natural gas to fail to meet the prescribed standard of quality.

Thus, the *Gas Safety (Gas Quality) Regulations 2017* provide:

“the prescribed standard of quality for natural gas conveyed through ... a distribution pipeline is set out in AS 4564.”²⁹²

This prescribed standard of quality is relevant to section 33 of the *Gas Safety Act 1997* which states that a gas company must ensure as far as practicable that the gas it conveys meets the prescribed standard of quality and complies with any prescribed requirements.

In our view, the correct interpretation of this regulation is that, for so long as a gas network conveys

²⁹⁰ We reviewed the current version of the *Gas Safety (Gas Quality) Regulations 2017 (Vic)*, which is the authorised version (version number 001) as at 22 September 2017.

²⁹¹ *Gas Safety (Gas Quality) Regulations 2017 (Vic)*, reg 1.

²⁹² *Gas Safety (Gas Quality) Regulations 2017 (Vic)*, reg 6(1).

“natural gas”, that gas must comply with AS 4564.

If the gas conveyed by a network is not natural gas, the regulation appears to have no application because it sets the prescribed standard of quality for “natural gas”.

There is no definition of “natural gas” in either the *Gas Safety (Gas Quality) Regulations 2017* or the *Gas Safety Act 1997*. In the absence of a particular definition, the term “natural gas” has its plain ordinary meaning unless the context otherwise requires.

The plain ordinary meaning of “natural gas” is a naturally occurring hydrocarbon gas mixture consisting primarily of methane. In context, it is possible that “natural gas” will be taken to mean natural gas as defined in AS4564.

Comment on application of the *Gas Safety (Gas Quality) Regulations 2017* to a pure hydrogen/biogas network

The *Gas Safety (Gas Quality) Regulations 2017* do not directly or expressly prohibit the operation of a network which supplies pure hydrogen gas or biogas.

The prescribed standards of quality under the *Gas Safety (Gas Quality) Regulations 2017* apply to “natural gas” and “LP Gas” and, therefore, do not apply to pure hydrogen or to biogas (unless biogas can be classified as “natural gas”).

The *Gas Safety (Gas Quality) Regulations 2017* state that “gas” must have an odour which is distinctive and unpleasant and have an odour level that is discernible at one-fifth of the lower explosive limit of the gas.²⁹³

For the purposes of the *Gas Safety (Gas Quality) Regulations 2017*, “gas” has the meaning given to that term in the *Gas Safety Act 1997* and, therefore, “gas” means any gaseous fuel but does not include any gaseous fuel that is declared under section 4 not to be gas for the purposes of the Act.

As “gas” would include pure hydrogen or biogas (where these are used as gaseous fuels), a pure hydrogen network and a biogas network would need to comply with the odour requirements under the *Gas Safety (Gas Quality) Regulations 2017*.

Other comments

Energy Safe Victoria may exempt a gas company from compliance with the prescribed standard of quality (under regulation 6) or the odour requirements (under regulation 7) if it is satisfied that the conveyance, supply, sale or use of the gas to which the standard of quality relates will be safe in the circumstances.²⁹⁴

²⁹³ *Gas Safety (Gas Quality) Regulations 2017* (Vic), reg 7.

²⁹⁴ *Gas Safety (Gas Quality) Regulations 2017* (Vic), reg 8.

Gas Safety (Gas Installation) Regulations 2008 (Vic)

Introduction

The *Gas Safety (Gas Installation) Regulations 2008 (Vic)* are regulations made under the *Gas Safety Act 1997*²⁹⁵.

The objectives of the *Gas Safety (Gas Installation) Regulations 2008* are:

- (a) to provide for standards for gasfitting work; and
- (b) to provide for the procedures relating to the acceptance of appliances and gas installations; and
- (c) to make provision generally in relation to the safety of gas appliances, gas installations and work on gas appliances and installations²⁹⁶.

Relevant Definitions

There are no relevant definitions in the *Gas Safety (Gas Installation) Regulations 2008*.

Is it permissible under the *Gas Safety (Gas Installation) Regulations 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Safety (Gas Installation) Regulations 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Safety (Gas Installation) Regulations 2008* to a pure hydrogen/biogas network

There are no provisions in the *Gas Safety (Gas Installation) Regulations 2008* which would affect the operation of a distribution network with pure hydrogen or biogas.

²⁹⁵ We reviewed the current version of the *Gas Safety (Gas Installation) Regulations 2008 (Vic)*, which is the authorised version (version number 003) incorporating amendments as at 31 March 2014.

²⁹⁶ *Gas Safety (Gas Installation) Regulations 2008 (Vic)*, r 1.

Other comments

None.

Gas Safety (Safety Case) Regulations 2008 (Vic)

Introduction

The *Gas Safety (Safety Case) Regulations 2008 (Vic)* are regulations made under the *Gas Safety Act 1997*²⁹⁷.

The objectives of the *Gas Safety (Safety Case) Regulations 2008* are:

- (a) to make provision for safety cases in relation to facilities, gas installations and appliances; and
- (b) to provide for the reporting of gas incidents²⁹⁸.

Relevant Definitions

There are no relevant definitions in the *Gas Safety (Safety Case) Regulations 2008*.

Is it permissible under the *Gas Safety (Safety Case) Regulations 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Safety (Safety Case) Regulations 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Safety (Safety Case) Regulations 2008* to a pure hydrogen/biogas network

There are no provisions in the *Gas Safety (Safety Case) Regulations 2008* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

²⁹⁷ We reviewed the current version of the *Gas Safety (Safety Case) Regulations 2008 (Vic)*, which is the authorised version (version number 002) incorporating amendments as at 20 March 2013.

²⁹⁸ *Gas Safety (Safety Case) Regulations 2008 (Vic)*, r 1.

National Gas (Victoria) Act 2008 (Vic)

Introduction

The *National Gas (Victoria) Act 2008 (Vic)* applies the *National Gas Law* as a law of the State²⁹⁹.

The purpose of the *National Gas (Victoria) Act 2008 (Vic)* is to provide for the establishment of a national framework to enable third parties to gain access to certain natural gas pipeline services³⁰⁰.

Relevant definitions

See *National Gas Law*.

Is it permissible under the *National Gas (Victoria) Act 2008* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas (Victoria) Act 2008* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas (Victoria) Act 2008* to a pure hydrogen/biogas network

There are no provisions in the *National Gas (Victoria) Act 2008* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

See analysis of *National Gas Law*.

²⁹⁹ We reviewed the current version of the *National Gas (Victoria) Act 2008 (Vic)*, which is the authorised version (version number 012) incorporating amendments as at 2 January 2018.

³⁰⁰ *National Gas (Victoria) Act 2008 (Vic)*, s 1.

Gas Distribution System Code

Introduction

The *Gas Distribution System Code* is made by the Essential Services Commission.³⁰¹ The *Distribution System Code*:

- operates and has effect under a distributor's distribution licence;³⁰² and
- applies to each distributor as the holder of a distribution licence and as operator of a distribution system.³⁰³

The *Distribution System Code* sets out the minimum standards for the operation and use of the distribution system, including requirements for:

- the operation of a distribution system;
- connections;
- disconnection and reconnection;
- metering;
- curtailment;
- customer complaint handling; and
- distribution contract requirements.³⁰⁴

Relevant definitions

For the purposes of the *Gas Distribution System Code*, "gas" means natural gas (as defined in the *Gas Industry Act 2001*) which meets the prescribed standards of quality and other requirements prescribed under the *Gas Safety Act 1997* and includes natural gas that has been injected into and stored in a storage facility and, where applicable, tempered liquefied petroleum gas.

³⁰¹ *Gas Distribution System Code*, version 11, effective 13 October 2014.

³⁰² *Gas Distribution System Code*, cl 1.3(b).

³⁰³ *Gas Distribution System Code*, cl 1.1.

³⁰⁴ *Gas Distribution System Code*, cl 1.2.

Is it permissible under the *Gas Distribution System Code* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution System Code* which directly or expressly prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Under the *Gas Distribution System Code*, a distributor is obliged to ensure that, where gas delivered into the distribution system meets the prescribed standards of quality, gas delivered out of the distribution system also meets the prescribed standards of quality.³⁰⁵

If a distributor wishes to inject hydrogen or biogas into an existing gas distribution network, it would need to ensure compliance with this obligation in relation to the prescribed standards of quality.

Comment on application of the *Gas Distribution System Code* to a pure hydrogen/biogas network

The *Gas Distribution System Code* will not apply to a pure hydrogen network or to a biogas network (unless, in the case of biogas, the biogas constitutes “natural gas” as defined in the *Gas Industry Act 2001* (Vic) which meets the prescribed standards of quality and other requirements prescribed under the *Gas Safety Act 1997* (Vic)).

This is because the *Gas Distribution System Code* applies to distributors who are licensed to provide distribution services for the supply of gas (as defined in the *Gas Distribution System Code*). If a network is not a “natural gas” network, the Code will not apply.³⁰⁶

Other comments

None.

³⁰⁵ *Gas Distribution System Code*, cl 2.1(e).

³⁰⁶ *Gas Distribution System Code*, cl 13 - see the definitions of “distributor”, “distribution licence”, “distribution service”, “distribution pipeline”, “distribution system”, “distribution supply points” and “gas”.

Retail Market Procedures (Victoria)

Introduction

The *Retail Market Procedures (Victoria)*³⁰⁷ are made pursuant to the *National Gas Law*.³⁰⁸ The Retail Market Procedures regulate the retail gas market.³⁰⁹ Amongst other things, the Retail Market Procedures:

- establish the meter data database and regulates meter reading;
- establish and regulates the MIRN database; and
- establish customer transfer processes.

Relevant definitions

There is no definition of “gas” or “natural gas” in the *Retail Market Procedures (Victoria)*.

However, as the *Retail Market Procedures* are made pursuant to the *National Gas Law*, it is most likely that terms defined in the *National Gas Law* will have the same definitions for the purposes of the Procedures.

Under the *National Gas Law*, “natural gas” means a substance that –

- (a) is in a gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption.³¹⁰

³⁰⁷ *Retail Market Procedures (Victoria)*, version 13.0, effective 31 July 2017.

³⁰⁸ See Division 2 of part 7 of the *National Gas Law*. Section 91M of the *NGL* states that AEMO may make the Retail Market Procedures. Section 91MA states that the Retail Market Procedures are a form of statutory instrument directed at the regulation of a retail gas market – that is, a retail market for “natural gas”.

³⁰⁹ Section 91L of the *National Gas Law* states that the retail gas market is constituted by the retail market for “natural gas”.

³¹⁰ *National Gas Law*, s 2. Note that the definition is the same as the definition of “natural gas” in the *Gas Industry Act 2001 (Vic)* except that the *NGL* definition adds an extra requirement – namely, that the gas is “suitable for consumption”.

Is it permissible under the *Retail Market Procedures (Victoria)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Retail Market Procedures (Victoria)* which prohibits the injection of hydrogen or biogas into an existing distribution network..

Comment on application of the *Retail Market Procedures (Victoria)* to a pure hydrogen/biogas network

In our view, the *Retail Market Procedures (Victoria)* are likely to apply only to a “natural gas” network and therefore, will not apply:

- (a) to a pure hydrogen network; or
- (b) to a biogas network where the biogas is not “natural gas” within the meaning of the *National Gas Law*.

Other comments

The *Retail Market Procedures (Victoria)* contain provisions which facilitate the operation of the retail gas market in Victoria.

For the reasons explained above, these provisions will not apply to a pure hydrogen network or to a network that contains biogas (where the biogas is not “natural gas”).

From a legal perspective, this is unlikely to create any significant practical issues where there is a single retailer supplying hydrogen or biogas through the network and there is no need to have mechanisms which facilitate customer transfers or gas allocation between multiple network users.

However, if it is necessary to accommodate multiple retailers or users in a hydrogen or biogas network, this might be impractical in the absence of the *Retail Market Procedures (Victoria)* or other arrangements which replicate the operation or effect of the *Retail Market Procedures (Victoria)*.

Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)

Introduction

The *Gas Quality and Monitoring Guidelines (Declared Transmission System)*³¹¹ provides information about the gas quality standard applicable to all system injection points in the Victorian Declared Transmission System. The Guidelines:

- (a) set out the gas quality standards;
- (b) describe the gas quality monitoring system;
- (c) explain the requirements for gas quality monitoring plans

The Guidelines do not apply to distribution systems.

Relevant definitions

None.

Is it permissible under the *Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)* to a pure hydrogen/biogas network

There are no provisions in the *Gas Quality Standard and Monitoring Guidelines (Declared Transmission System)* which would affect the operation of a distribution system with pure hydrogen or biogas.

³¹¹ *Gas Quality and Monitoring Guidelines (Declared Transmission System)*, version 3, effective 6 October 2016.

Other comments

None.

WESTERN AUSTRALIAN REGULATORY INSTRUMENTS

Energy Coordination Act 1994 (WA)

Introduction

The *Energy Coordination Act 1994 (WA)*³¹² provides:

- a scheme for licensing the supply of gas in certain areas of Western Australia;
- the conferral of functions on the Economic Regulation Authority in respect of the licensing scheme;
- the facilitation of competition in the retail gas market by provision for appropriate arrangements between businesses operating in that market, a marketing code of conduct and a scheme for the resolution of certain customer disputes;
- other regulation of the gas supply industry;
- a public officer to coordinate and advise on energy policy and with functions under certain written laws relating to energy supply and in relation to the promotion of energy research; and
- a public officer with functions under certain written laws relating to energy safety³¹³.

Under the *Energy Coordination Act*, a person must not, in a supply area, transport gas through a distribution system unless they hold a licence.³¹⁴

Relevant definition

Gas means any gas or mixture of gases, whether naturally occurring or manufactured, intended for use –

- (a) as a fuel; or
- (b) in any chemical process³¹⁵.

This definition of “gas” is very broad. It would clearly include hydrogen and biogas when intended for use as a fuel or in any chemical process.

³¹² We reviewed the current version of the *Energy Coordination Act 1994 (WA)*, which is version 04-h0-09 incorporating amendments as of 30 January 2012.

³¹³ *Energy Coordination Act 1994 (WA)*, long title.

³¹⁴ *Energy Coordination Act 1994 (WA)*, s 11G.

³¹⁵ *Energy Coordination Act 1994 (WA)*, s 3(1).

Is it permissible under the *Energy Coordination Act 1994* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Energy Coordination Act 1994* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that:

- (a) the injection of hydrogen or biogas does not infringe any licence conditions;³¹⁶ and
- (b) the injection does not infringe any provision of the Retail Market Scheme.³¹⁷

Under the *Energy Coordination Act 1994*, it is a condition of every licence that the licensee complies with the standards prescribed under the *Gas Standards Act 1972* (WA) to the extent that those standards apply to the supply of gas by the licensee.³¹⁸ The *Gas Standards Act 1972* is discussed below.

Comment on application of the *Energy Coordination Act 1994* to a pure hydrogen/biogas network

For the purposes of the *Energy Coordination Act 1994*, “gas” is defined to include any gas, or mixture of gases, whether naturally occurring or manufactured, intended for use as a fuel or in any chemical process. This would include hydrogen and biogas when intended for use as a fuel or in any chemical process. Consequently, the *Energy Coordination Act 1994* would apply to a pure hydrogen network and to a biogas network in a supply area.

If the *Energy Coordination Act 1994* applies to a hydrogen network or a biogas network, a person could not construct, alter or operate that network, or transport gas through that network, except:

- (a) under the authority of a distribution licence which applies to the relevant supply area;³¹⁹ or
- (b) if the person was exempted by order from the requirement for a distribution licence.³²⁰

³¹⁶ *Energy Coordination Act 1994* (WA), s 11M allows the Economic Regulation Authority to impose conditions on a licence. Division 7 of the Act describes the consequences of non-compliance with licence conditions.

³¹⁷ *Energy Coordination Act 1994* (WA), ss 11ZOC. The Retail Market Scheme is the AEMO Retail Market Procedures, which is discussed below.

³¹⁸ *Energy Coordination Act 1994* (WA), s 11Z.

³¹⁹ *Energy Coordination Act 1994* (WA), s 11G.

³²⁰ *Energy Coordination Act 1994* (WA), s 11H.

Other comments
None.

Energy Coordination (Retail Market Schemes) Regulations 2004 (WA)

Introduction

The *Energy Coordination (Retail Market Schemes) Regulations 2004 (WA)* are regulations made under the *Energy Coordination Act 1994 (WA)*³²¹.

The *Energy Coordination (Retail Market Schemes) Regulations 2004 (WA)* prescribe persons who are required to comply with relevant provisions of retail market rules as part of any approved retail market scheme for a distribution system under section 11ZOD of the *Energy Coordination Act 1994 (WA)*.

Relevant definition

None.

Is it permissible under the *Energy Coordination (Retail Market Schemes) Regulations 2004* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Energy Coordination (Retail Market Schemes) Regulations 2004* that prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Energy Coordination (Retail Market Schemes) Regulations 2004* to a pure hydrogen/biogas network

The *Energy Coordination (Retail Market Schemes) Regulations 2004* does not contain any provisions which would affect a pure hydrogen or biogas network.

Other comments

None.

³²¹ We reviewed the current version of the *Energy Coordination (Retail Market Schemes) Regulations 2004 (WA)* which is version number 00-a0-10 incorporating amendments as at 31 May 2004.

Gas Standards Act 1972 (WA)

Introduction

The *Gas Standards Act 1972* provides a scheme to regulate the standards of quality, pressure, purity and safety of gas supplied in Western Australia, and the standards and safety of gas installations and gas appliances³²².

The *Gas Standards Act 1972* and subordinate regulations apply to licensed entities under the *Energy Coordination Act 1994*.

Relevant definition

Gas means any gas or mixture of gases intended for use as fuel for gas appliances or for use in any chemical process³²³;

Is it permissible under the *Gas Standards Act 1972* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Standards Act 1972* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that:

- (a) the injection does not infringe any technical or safety requirements under subordinate regulations, in particular regulations with respect to gas standards and quality;³²⁴
- (b) the injection does not alter the heating value of the supplied gas to a level that has not been approved by the Minister;³²⁵ and
- (c) the injection does not cause any alteration to the specific gravity or flame speed of gas supplied unless the Minister has provided written approval to the alteration.³²⁶

³²² We reviewed the current version of the *Gas Standards Act 1972 (WA)*, which is version number 04-a0-08 incorporating amendments as at 4 July 2008.

³²³ *Gas Standards Act 1972 (WA)*, s 4.

³²⁴ Regulations are discussed below.

³²⁵ *Gas Standards Act 1972 (WA)*, s 8(1). A breach of this section will result in a penalty of \$250,000. Also see ss 8(6) – (8).

³²⁶ *Gas Standards Act 1972 (WA)*, s 9(1). A breach of this section will result in a penalty of \$50,000 for an individual and \$250,000 for a body corporate.

Comment on application of the *Gas Standards Act 1972* to a pure hydrogen/biogas network

For the purposes of the *Gas Standards Act 1972*, “gas” is defined to mean any gas or mixture of gases intended for use as fuel for gas appliances.³²⁷ This definition would include pure hydrogen and biogas when intended for use as fuel for gas appliances. Consequently, the *Gas Standards Act 1972* will apply to a hydrogen network or a biogas network.

Other comments

None.

³²⁷ *Gas Standards Act 1972* (WA), s 4.

Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)

Introduction

The *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* are subordinate to the *Gas Standards Act 1972*³²⁸ and set out:

- standards for gas supplied and the duties of licensees under the *Energy Coordination Act 1994*;
- metering;
- entry and commingling of gas of different qualities;
- distribution system safety; and
- gas plant safety.

Relevant definition

Natural gas means a hydrocarbon gas, in liquefied or vapour form, consisting mainly of methane³²⁹.

Is it permissible under the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* which prohibits the injection of hydrogen or biogas into an existing gas distribution network provided that:

- (a) natural gas supplied through the network continues to comply with AS- 4564-2011, *Specification for general-purpose natural gas, Table 3*.³³⁰;
- (b) the gas continues to contain sufficient odorant to meet the requirements of Schedule 1 to the Regulations;³³¹
- (c) if gas of different qualities from 2 or more pipelines is commingled, there is an approved plan relating to the operation of the gas distribution network;³³²

³²⁸ We reviewed the current version of the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, which is version number 02-b0-00 incorporating amendments as at 12 October 2016.

³²⁹ *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 3.

³³⁰ *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 5(2)(a).

³³¹ *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 6.

- (d) the injection of hydrogen or biogas is carried out in such a way as to provide for the safety of persons and avoid or minimise any damage to property, inconvenience or other detriment as a result of the injection, so far as is reasonably practicable;³³³ and
- (e) the injection of hydrogen or biogas complies with any relevant practice or procedure set out in the accepted safety case for the network and any provision of any code, standard or specification applicable under the accepted safety case;³³⁴

Comment on application of the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* to a pure hydrogen/biogas network

The *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* will apply to a pure hydrogen network or a biogas network in the same way that it applies to a gas distribution network so long as:

- (a) the hydrogen or biogas is intended for use as a fuel or in a chemical process; and
- (b) the network is designed to operate at a pressure of less than 1.9 megapascals.

This is because:

- (a) the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)* apply to “network operators”;
- (b) a “network operator” is an undertaker who operates a distribution system within the meaning of section 3 of the *Energy Coordination Act 1994 (WA)*;³³⁵
- (c) under section 3 of the *Energy Coordination Act 1994 (WA)*, a ‘distribution system is any system of pipelines, mains and gas service pipes designed to operate at a pressure of less than 1.9 megapascals, for the transportation of gas to customers; and
- (d) for the purposes of the *Energy Coordination Act 1994 (WA)*, “gas” means any gas, or mixture of gases, whether naturally occurring or manufactured, intended for use as a fuel or in any chemical process.³³⁶

The definition of “gas” in the *Energy Coordination Act 1994 (WA)* is broad enough to include hydrogen and biogas when intended for use as a fuel or in a chemical process.

³³² *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 17B. Regulation 17B requires a network operator to have an approved plan when the operator wishes to commingle gas of different qualities from two or more pipelines. Regulation 17H requires the network operator to ensure that the approved plan is implemented and complied with.

³³³ *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 18.

³³⁴ *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*, r 37.

³³⁵ See the definition of “network operator” and “distribution system” in regulation 3 of the *Gas Standards (Gas Supply and System Safety) Regulations 2000 (WA)*.

³³⁶ *Energy Coordination Act 1994 (WA)*, s 3.

Other comments
None

Gas Supply (Gas Quality Specifications) Act 2009 (WA)

Introduction

The *Gas Supply (Gas Quality Specifications) Act 2009 (WA)* was enacted to allow gas producers to supply lower quality gas to declared transmission pipelines (**PIA pipelines**) subject to a Pipeline Impact Agreement with the operator³³⁷.

The *Gas Supply (Gas Quality Specifications) Act 2009 (WA)* provides for:

- (a) the supply of gas that does not meet certain gas quality specifications;
- (b) the control of the quality of such gas and its impact on gas transmission pipelines;
- (c) the payment of compensation to certain gas consumers and operators of transmission pipelines or gas storage facilities;
- (d) a programme to modify or replace certain gas appliances; and
- (e) the operation of an account for contributions by gas producers to the costs of the programme³³⁸.

The Dampier to Bunbury Natural Gas Pipeline and the Goldfields Gas Pipeline are both PIA pipelines for the purposes of the *Gas Supply (Gas Quality Specifications) Act 2009*.

Relevant definition

None.

Is it permissible under the *Gas Supply (Gas Quality Specifications) Act 2009* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply (Gas Quality Specifications) Act 2009* which prohibits the injection of hydrogen or biogas into an existing distribution network.

³³⁷ We reviewed the current version of the *Gas Supply (Gas Quality Specifications) Act 2009 (WA)*, which is version number 00-b0-07 incorporating amendments as at 27 March 2010.

³³⁸ *Gas Supply (Gas Quality Specifications) Act 2009 (WA)*, long title.

Comment on application of the *Gas Supply (Gas Quality Specifications) Act 2009* to a pure hydrogen/biogas network

The *Gas Supply (Gas Quality Specifications) Act 2009* does not contain any provisions which would prohibit the operation of a pure hydrogen or biogas network.

Other comments

This legislation is specific to gas quality that is supplied by gas producers to declared gas transmission pipelines.

Gas Supply (Gas Quality Specifications) Regulations 2010 (WA)

Introduction

The *Gas Supply (Gas Quality Specifications) Regulations 2010* are made pursuant to the *Gas Supply (Gas Quality Specifications) Act 2009*³³⁹.

The Regulations govern:

- gas quality and capacity of PIA pipelines under the *Gas Supply (Gas Quality Specifications) Act 2009*;
- modifications to gas contracts which are effected by gas received / delivered of a different quality;
- compensation for transmission pipeline operators for gas received / delivered of a different quality; and
- dispute resolution in relation to the above.

Relevant definition

None.

Is it permissible under the *Gas Supply (Gas Quality Specifications) Regulations 2010* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Supply (Gas Quality Specifications) Regulations 2010* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Gas Supply (Gas Quality Specifications) Regulations 2010* to a pure hydrogen/biogas network

There is nothing in the *Gas Supply (Gas Quality Specifications) Regulations 2010* which prohibits the operation of an existing distribution network with pure hydrogen or biogas.

³³⁹ We reviewed the current version of the *Gas Supply (Gas Quality Specifications) Regulations 2010*, which is version number 01-b0-01 incorporating amendments as at 10 December 2016.

Other comments
None.

National Gas Access (WA) Act 2009 (WA)

Introduction

The *National Gas Access (WA) Act 2009 (WA)* establishes a framework to enable third parties to gain access to certain gas pipeline services.³⁴⁰

The *National Gas Access (WA) Act 2009 (WA)* applies a modified version of the National Gas Law as a law of Western Australia³⁴¹. This modified version of the National Gas Law is known as the National Gas Access (Western Australia) Law.

Relevant definition

None.

Is it permissible under the *National Gas Access (WA) Act 2009* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas Access (WA) Act 2009* (or the proposed amendments) which prohibits the injection of hydrogen or biogas into an existing gas distribution network.

Comment on application of the *National Gas Access (WA) Act 2009* to a pure hydrogen/biogas network

The *National Gas Law* will not apply to a pure hydrogen network because the *National Gas Law* regulates pipelines for the haulage of natural gas and the service providers who own, operate and control natural gas pipelines. Pure hydrogen is not “natural gas” within the meaning of the *National Gas Law*³⁴².

Section 6A of the *National Gas Access (WA) Act 2009 (WA)* extends the National Gas Access (Western Australia) Law beyond natural gas to pipelines for hauling “gas other than natural gas” if

³⁴⁰ We reviewed the current version of the *National Gas Access (WA) Act 2009 (WA)*, which is version 00-f0-01 incorporating amendments as at 23 December 2017.

³⁴¹ *National Gas Access (WA) Act 2009 (WA)*, s 7(1).

³⁴² *National Gas Law*, s2.

the pipeline constitutes or is part of a system for which a licence is in force under Part 2A of the *Energy Coordination Act 1994*³⁴³. For the purposes of the National Gas Access (Western Australia) Law, “gas other than natural gas” means substances which:

- (a) are in a gaseous state at standard temperature and pressure; and
- (b) consist of:
 - (i) naturally occurring hydrocarbons; or
 - (ii) a naturally occurring or manufactured mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is propane, propene, butanes, butenes or a mixture of all or any of those substances or kinds of substances.³⁴⁴

The effect of these provisions is to extend the operation of the National Gas Access (Western Australia) Law beyond “natural gas” although the extended definition is not broad enough to encompass pure hydrogen.

Similarly, the *National Gas Law* will not apply to a biogas network unless the biogas constitutes “natural gas” within the meaning of the *National Gas Law* or a substance which falls within the definition of “gas other than natural gas” for the purposes of the *National Gas Access (WA) Act 2009* (WA).

Other comments

None.

³⁴³ *National Gas Access (WA) Act 2009* (WA), s6A(1).

³⁴⁴ *National Gas Access (WA) Act 2009* (WA), s6A(3).

National Gas Access (WA) (Part 3) Regulations 2009 (WA)

Introduction

The *National Gas Access (WA) (Part 3) Regulations 2009 (WA)* are made pursuant to the *National Gas Access (WA) Act 2009*.³⁴⁵

Among other things, the Regulations establish powers and procedural requirements for disputes under the Act.

Relevant definition

None.

Is it permissible under the *National Gas Access (WA) (Part 3) Regulations 2009* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas Access (WA) (Part 3) Regulations 2009* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas Access (WA) (Part 3) Regulations 2009* to a pure hydrogen/biogas network

There is nothing in the *National Gas Access (WA) (Part 3) Regulations 2009* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

³⁴⁵ We have reviewed the current version of the *National Gas Access (WA) (Part 3) Regulations 2009 (WA)*, which is version number 00-a0-04, incorporating amendments as of 1 January 2010.

National Gas Access (WA) (Local Provisions) Regulations 2009 (WA)

Introduction

The *National Gas Access (WA) (Local Provisions) Regulations 2009 (WA)* are made pursuant to the *National Gas Access (WA) Act 2009*.³⁴⁶

Among other things, the Regulations govern:

- reference tariffs for supply to small use customers of distribution pipelines; and
- arbitrator funding.

Relevant definition

None.

Is it permissible under the *National Gas Access (WA) (Local Provisions) Regulations 2009* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *National Gas Access (WA) (Local Provisions) Regulations 2009* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *National Gas Access (WA) (Local Provisions) Regulations 2009* to a pure hydrogen/biogas network

There are no provisions in the *National Gas Access (WA) (Local Provisions) Regulations 2009* which would affect the operation of a distribution network with pure hydrogen or biogas.

Other comments

None.

³⁴⁶ We have reviewed the current version of the *National Gas Access (WA) (Local Provisions) Regulations 2009 (WA)*, which is version number 00-a0-03, incorporating amendments as of 1 January 2010.

Retail Market Procedures (WA)

Introduction

The *Retail Market Procedures (WA)* govern interactions between participants, pipeline operators, prescribed persons and AEMO in the Western Australian gas retail market.³⁴⁷

The *Retail Market Procedures (WA)*:

- establish the AEMO registry, which includes all delivery points on a network operator's sub-network and identifies the current user for each delivery point;
- require each network operator to create and maintain the MIRN database and a meter standing data (MSD) database;
- regulate the use of MIRNs;
- facilitate transfers of customers from one user to another user;
- regulate the disconnection and reconnection of delivery points and the removal of delivery points and deregistration of MIRNs;
- regulate metering and metering data; and
- provide for the allocation and reconciliation of gas deliveries and the provision of swing services.

Relevant definition

None.

Is it permissible under the *Retail Market Procedures (WA)* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Retail Market Procedures (WA)* which prohibits the injection of hydrogen or biogas into an existing distribution network.

Comment on application of the *Retail Market Procedures (WA)* to a pure hydrogen/biogas network

The *Retail Market Procedures (WA)* apply to "network operators" in relation to "networks", "sub-

³⁴⁷ See *Energy Coordination Act 1994 (WA)*, ss 11ZOC, 11ZOF and 11ZOG. We have reviewed the current version of the *Retail Market Procedures (WA)*, which is version number 2.0, effective as of 31 March 2017.

networks” and “delivery points”. For the purposes of the *Retail Market Procedures (WA)*:

- (a) a “network operator” is a person who holds a licence which authorises the licence holder to construct and transport gas, or to transport gas, through a gas distribution system and to operate and maintain the gas distribution system;³⁴⁸
- (b) a “network” is a distribution pipeline within the meaning of the *National Gas Access (Western Australia) Law*;³⁴⁹
- (c) a “sub-network” is a part of a gas distribution system which is identified as a sub-network for contractual and operational purposes by a network operator and which is listed in Appendix 1 (or added to the list in Appendix 1);³⁵⁰ and
- (d) a “delivery point” is a point identified in a haulage contract as a point on a sub-network at which a network operator delivers gas out of the sub-network to a user;³⁵¹

The *Retail Market Procedures (WA)* refer to “gas” but the Procedures do not define “gas” or indicate whether the term “gas” includes hydrogen and biogas or is limited to natural gas. Consequently, when you read the *Retail Market Procedures (WA)*, it is not obvious whether the *Retail Market Procedures (WA)* is limited to natural gas networks or could extend to a pure hydrogen network or a biogas network.

The answer is not obvious because the *Retail Market Procedures (WA)* does not seek to distinguish between natural gas networks and other networks. Instead, the *Retail Market Procedures (WA)* apply to the sub-networks which are identified in Appendix 1 and any new sub-networks which are nominated by a network operator pursuant to clause 15(3) of the *Retail Market Procedures (WA)* and verified by AEMO. The existing group of sub-networks comprises:

- Geraldton (Nangetty Road)
- Eneabba
- Muchea
- Ellenbrook

³⁴⁸ *Retail Market Procedures (WA)*, cl 2.

³⁴⁹ *Retail Market Procedures (WA)*, cl 2. For the purposes of the *National Gas Access (WA) Law*, a distribution pipeline is a pipeline that is classified as a distribution pipeline in accordance with the Law or the Rules (or an extension or expansion of such a pipeline). Under the *National Gas Access (WA) Law*, the classification of a pipeline depends on whether its primary function is to reticulate gas within a market (a distribution pipeline) or to convey gas to a market (a transmission pipeline). The important point to note is that, for the purposes of the *National Gas Access (WA) Law*, “gas” is limited to “natural gas” and “gas other than natural gas” as defined in section 6A of the *National Gas Access (WA) Act 2009*. It would not extend to “hydrogen”. It also would not extend to biogas unless the biogas fell within the definition of “natural gas” or “gas other than natural gas” (refer to the discussion of the *National Gas Access (WA) Act 2009*),

³⁵⁰ *Retail Market Procedures (WA)*, cl 2. The definition of “sub-network” states that a sub-network needs to be listed in Appendix 1. At the first sight, this suggests that the possible range of sub-networks is limited to those sub-networks identified in the Appendix. However, clause 15(3) of the *Retail Market Procedures (WA)* allows the network operator to propose changes to Appendix 1, which are then verified by AEMO.

³⁵¹ *Retail Market Procedures (WA)*, cl 2. A “haulage contract” is a contract between a network operator and a user for the transportation of gas through the network operator’s gas distribution system. A “user” means an entity that has a haulage contract for the transport of gas.

- Metro North
- Metro South
- Barter Road, Naval Base
- Rockingham
- Pinjarra
- Oakley Road (Pinjarra)
- Harvey
- Kemerton
- Clifton Road, Bunbury
- Albany (uncovered sub-network)
- Kalgoorlie (uncovered sub-network)

These sub-networks are currently natural gas networks and not hydrogen networks or biogas networks. Thus, as things stand, the *Retail Market Procedures (WA)* do not currently apply to a pure hydrogen network or a biogas network.

That said, the terms of the *Retail Market Procedures (WA)* are generic and do not seem limited such that the Procedures can apply only to natural gas networks. Given the generic terms of the *Retail Market Procedures (WA)*, it would seem possible for a network operator to nominate a hydrogen network or a biogas network as a sub-network, and for AEMO to then accept that sub-network, for the purposes of the *Retail Market Procedures (WA)*. If this were to happen, the *Retail Market Procedures (WA)* would seem to apply to a hydrogen network or a biogas network, in the same way that the Procedures currently apply to the sub-networks listed in Appendix 1.

Other comments

None.

DISTRIBUTION LICENCES AND AUTHORITIES

ActewAGL Distribution Licence (ACT)

Introduction

This is a licence granted under the *Utilities Act 2000* to ACTEW Distribution Ltd and Jemena Networks (ACT) Pty Ltd trading as ActewAGL Distribution³⁵².

Relevant definition

In the Licence, “utility service” has the meaning given in the *Utilities Act 2000* (ACT). The *Utilities Act 2000* (ACT) states that a utility service comprises:

- (a) the transmission of gas through a gas transmission network;
- (b) the distribution of gas through a gas distribution network; and
- (c) a gas connection service.³⁵³

A “gas connection service” is a gas connection service within the meaning of the national gas rules, part 12A (Gas connection for retail customers).³⁵⁴

For the purposes of the *Utilities Act 2000* (ACT), gas means “natural gas” (as defined in the *National Gas (ACT) Law*, section 2).

For the purposes of section 2 of the *National Gas (ACT) Law*, “natural gas” means a substance that

-
- (a) is gaseous state at standard temperature and pressure; and
- (b) consists of naturally occurring hydrocarbons, or a naturally occurring mixture of hydrocarbons and non-hydrocarbons, the principal constituent of which is methane; and
- (c) is suitable for consumption³⁵⁵.

The nett effect of these definitions is that “hydrogen” is not a gas for the purposes of the Licence

³⁵² We were given a copy of the distribution licence as varied on 1 July 2009.

³⁵³ *Utilities Act 2000* (ACT), s 9.

³⁵⁴ See the dictionary at the end of the *Utilities Act 2000* (ACT).

³⁵⁵ *National Gas Law*, s2.

and biogas is also not a gas unless it constitutes “natural gas” as defined in section 2 of the *National Gas (ACT) Law*.

Is it permissible under the ActewAGL Distribution Licence to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the ActewAGL Distribution Licence which prohibits the injection of hydrogen or biogas into an existing gas distribution network to the extent that the injection does not infringe any:

- (a) requirements imposed under applicable technical or industry codes;³⁵⁶
- (b) network operation standards;³⁵⁷
- (c) requirements imposed by AG750 Environmental Code of Practice; or
- (d) requirements imposed by the Australian Pipeline Industry Code or Practice for Pipeline Construction.³⁵⁸

Comment on application of the ActewAGL Distribution Licence to a pure hydrogen/biogas network

The licence authorises the Licensee to provide authorised utility services, which are:

- (a) the distribution of gas through a distribution network³⁵⁹; and
- (b) a gas connection service³⁶⁰.

“Gas” is defined as “natural gas” and, as noted above, would not include hydrogen or biogas (unless biogas is “natural gas” as defined in the *National Gas (ACT) Law*).

This means the Licence does not authorise utility services which relate to hydrogen or to biogas (where biogas is not a natural gas). It does not mean the Licensee cannot undertake those activities. The Licence states it does not, and is not to be taken to limit or prevent the Licensee from doing anything that it may lawfully do without the benefit of the Licence.³⁶¹

³⁵⁶ *ActewAGL Distribution Licence*, cll 6.1 and 6.2.

³⁵⁷ *ActewAGL Distribution Licence*, Sch 1, cl 2.1.

³⁵⁸ *ActewAGL Distribution Licence*, Sch 1, cl 3.

³⁵⁹ *Utilities Act 2000 (ACT)*, s9(b).

³⁶⁰ *Utilities Act 2000 (ACT)*, s9(c).

³⁶¹ *ActewAGL Distribution Licence*, cl 3(1).

Other comments

None.

Area Distribution Authority (Qld)

Introduction

This is an authority issued to Australian Gas Networks Limited under the *Gas Supply Act 2003*.³⁶²

Relevant definition

The definitions set out in the *Gas Supply Act 2003* are adopted.

Is it permissible under the *Area Distribution Authority* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Area Distribution Authority* which prohibits the distributor from injecting hydrogen or biogas into its existing network provided that the injection of hydrogen or biogas does not breach subject to compliance with the *Gas Supply Act 2003* (Qld), the *Gas Supply Regulation 2007* and any other regulation under the *Gas Supply Act 2003* (Qld) and any other applicable laws.³⁶³

Comment on application of the *Area Distribution Authority* to a pure hydrogen/biogas network

The distribution authority authorises the Distributor to transport processed natural gas using the Distributor's distribution systems and provide customer connection services to the premises of customers within the distribution areas described in the distribution authority.³⁶⁴

Hydrogen is not "processed natural gas" so the distribution authority does not authorise the operation of a hydrogen network and is not relevant to a hydrogen network.³⁶⁵

Biogas might constitute a "processed natural gas" and, if it does, the distribution authority would authorise AGN to operate one or more of the specified distribution systems as a biogas network,

³⁶² We were given a copy of the distribution authority dated 21 April 2015.

³⁶³ *Area Distribution Authority* (Qld), cl 5.1.

³⁶⁴ *Area Distribution Authority* (Qld), cl 2.5.

³⁶⁵ See the discussion on the *gas Supply Act 2003* (Qld) for the definition of "processed natural gas" which appears in section 11 of the *Gas Supply Act 2003* (Qld).

subject to compliance with the *Gas Supply Act 2003* (Qld), the *Gas Supply Regulation 2007* and any other regulation under the *Gas Supply Act 2003* (Qld) and any other applicable laws.³⁶⁶

Other comments

None.

³⁶⁶ *Area Distribution Authority* (Qld), cl 5.1.

Reticulator's Authorisation (NSW)

Introduction

This Reticulator's Authorisation is granted to a group or reticulators for each distribution district under the *Gas Supply Act 1996*.

Relevant definition

Gas means natural gas.

Is it permissible under the *Reticulator's Authorisation* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Reticulator's Authorisation* which prohibits the injection of hydrogen or biogas into an existing distribution network to the extent that the injection does not infringe on any applicable Network Code.³⁶⁷

Comment on application of the *Reticulator's Authorisation* to a pure hydrogen/biogas network

The *Gas Supply Act 1996* (NSW) makes it an offence for a person to operate a distribution pipeline for the purpose of conveying natural gas to any other person otherwise than under the authority of an authorisation. The Reticulator's Authorisation is an authorisation to convey natural gas. The Reticulator's Authorisation is not required to authorise the operation of a distribution pipeline to convey hydrogen or biogas which is not natural gas.

Other comments

Clause 2 of the *Reticulator's Authorisation* requires the reticulator to, where practicable, give the Tribunal at least 3 months prior written notice of its intention to cease operating the whole or any substantial part of a distribution pipeline specified in its reticulator's authorisation.

³⁶⁷ *Reticulator's Authorisation* (NSW), cl 3 provides that if a distribution pipeline is a designated distribution pipeline, the reticulator must develop, adopt and comply with a Network Code for that pipeline.

“Distribution pipeline” is defined in the *Gas Supply Act 1996* as:

the gas pipes and associated equipment that are used to convey and control the conveyance of natural gas to the premises of customers...

On a strict interpretation, if a reticulator converted a natural gas network to a hydrogen network, this would appear to trigger the notice requirement under clause 2, as the distribution pipeline is no longer used to convey natural gas.

Gas Distribution Licence (Vic)

Introduction

The *Gas Distribution Licence* is granted by the Essential Services Commission to Vic Gas Distribution Pty Ltd in accordance with the *Gas Industry Act 2001 (Vic)*.³⁶⁸

Relevant definition

None.

Is it permissible under the *Gas Distribution Licence* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution Licence* which would prohibit the injection of hydrogen or biogas into the existing gas distribution network provided the Distributor complies with:

- (a) the Gas Distribution System Code;
- (b) the Gas Retail Code;
- (c) all other codes, standards, rules and guidelines which are specified by the Essential Services Commission to apply to the Distributor;
- (d) customer-related standards and procedures; and
- (e) all applicable laws.³⁶⁹

Comment on application of the *Gas Distribution Licence* to a pure hydrogen/biogas network

The *Gas Industry Act 2001 (Vic)* makes it an offence for a person to provide services by means of a distribution pipeline

For the purposes of the *Gas Industry Act 2001 (Vic)*, a “distribution pipeline” means a pipeline for the conveyance of gas.³⁷⁰

Gas is defined to mean any gaseous fuel (other than a gaseous fuel which is declared to not be a

³⁶⁸ We were given a copy of the *Gas Distribution Licence* as varied on 18 December 2002 (effective from 1 January 2003).

³⁶⁹ *Gas Distribution Licence*, cll 4(a) and 8.

³⁷⁰ The definition of “distribution pipeline” excludes a transmission pipeline or a gathering line within the meaning of the *Petroleum Act 1998 (Vic)*.

gas for the purposes of the *Gas Industry Act 2001 (Vic)*³⁷¹.

For the purposes of the *Gas Industry Act 2001 (Vic)*, a “gas” would include hydrogen or biogas.

Accordingly, the Gas Distribution Licence would authorise the operation of a hydrogen network or a biogas network in the distribution areas identified within the Gas Distribution Licence, provided the Distributor complies with:

- (a) the Gas Distribution System Code;
- (b) the Gas Retail Code;
- (c) all other codes, standards, rules and guidelines which are specified by the Essential Services Commission to apply to the Distributor;
- (d) customer-related standards and procedures; and
- (e) all applicable laws.³⁷²

Other comments
None.

³⁷¹ *Gas Industry Act 2001 (Vic)*, s 3.

³⁷² *Gas Distribution Licence*, cl 4(a) and 8.

Gas Distribution Licence (SA)

Introduction

The *Gas Distribution Licence* was granted by the Technical Regulator to Australian Gas Networks Limited under the *Gas Act 1997 (SA)*.³⁷³

Relevant definition

None.

Is it permissible under the *Gas Distribution Licence* to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution Licence* which prohibits the injection of hydrogen or biogas into the existing distribution network provided that:

- (a) the licensee complies with all applicable regulatory instruments, including any technical and safety requirements under the *Gas Act 1997 (SA)* and the *Natural Gas (South Australia) Act 2008 (SA)*;³⁷⁴
- (b) the licensee uses its best endeavours to conduct the operations authorised by the licence in accordance with good gas industry practice;³⁷⁵ and
- (c) the licensee complies with its safety, reliability, maintenance and technical management plan.³⁷⁶

³⁷³ We were given a copy of the *Gas Distribution Licence* as last varied by the Essential Services Commission on 16 December 2014.

³⁷⁴ *Gas Distribution Licence (SA)*, cl 4.1.

³⁷⁵ *Gas Distribution Licence (SA)*, cl 5.1.

³⁷⁶ *Gas Distribution Licence (SA)*, cl 8.1.

Comment on application of the *Gas Distribution Licence* to a pure hydrogen/biogas network

Under the *Gas Act 1997* (SA), a licence is required to operate a distribution system.³⁷⁷

A “distribution system” is a system of pipes for use in connection with the distribution of “gas”, which is defined as a gaseous fuel consisting of hydrocarbon or predominantly of hydrocarbons that is in a gaseous or vapour form when it is at the pressure and temperature of its normal pipeline transportation and utilisation conditions.³⁷⁸

The *Gas Act 1997* (SA) does not require a person to hold a licence to operate a pure hydrogen network or a biogas network (where the biogas is not “gas” as defined in the *Gas Act 1997* (SA)).

Other comments

None.

³⁷⁷ *Gas Act 1997* (SA), s 19.

³⁷⁸ See the definition of “distribution system” and “gas” in section 4 of the *Gas Act 1997* (SA).

Gas Distribution Licence (WA)

Introduction

This *Gas Distribution Licence* was issued by the Economic Regulation Authority to ATCO Gas Australia Pty Ltd.³⁷⁹

Relevant definition

Gas means any gas or mixture of gases, whether naturally occurring or manufactured, intended for use:

- (a) as a fuel; or
- (b) in any chemical process.

Is it permissible under the Gas Distribution Licence (WA) to inject hydrogen and/or biogas into existing gas distribution networks and, if so, to what extent?

There is nothing in the *Gas Distribution Licence (WA)* which prohibits the injection of hydrogen or biogas into an existing distribution network provided the licensee complies with any applicable legislation.³⁸⁰

Comment on application of the Gas Distribution Licence (WA) to a pure hydrogen/biogas network

The *Gas Distribution Licence* grants a licence to the licensee for the licence area to:

- (a) construct a distribution system and to transport gas through the distribution system;
- (b) transport gas through an existing distribution system; and
- (c) operate and maintain the distribution system.³⁸¹

For the purposes of the *Gas Distribution Licence*, gas means any gas or mixture of gases, whether

³⁷⁹ We were given a copy of GDL8, Version 11, 1 January 2017.

³⁸⁰ *Gas Distribution Licence*, cl 5.1.

³⁸¹ *Gas Distribution Licence*, cl 2.1.

naturally occurring or manufactured, intended for use as a fuel or in any chemical process.³⁸² This broad definition would include hydrogen and biogas.

For the purposes of the *Gas Distribution Licence*, a distribution system means any system of pipelines, mains and gas service pipes, designed to operate at a pressure of less than 1.9 megapascals, for the transportation of gas (as defined).³⁸³

The concept of a “distribution system” would include a pure hydrogen network and also a biogas network, where the hydrogen or biogas is intended for use as a fuel or in a chemical process and the network is designed to operate at a pressure of less than 1.9 megapascals.

Consequently, the *Gas Distribution Licence* would authorise the construction and operation of a pure hydrogen network or a biogas network within the licence areas stated in schedule 1 to the *Gas Distribution Licence*, provided the licensee complies with any applicable legislation.³⁸⁴

Other comments

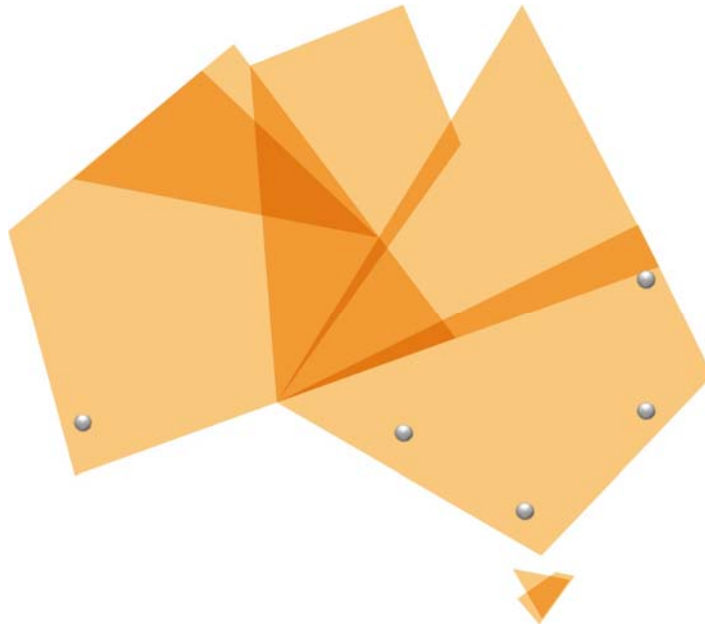
None.

³⁸² *Gas Distribution Licence*, cl 1.1.

³⁸³ *Gas Distribution Licence*, cl 1.1.

³⁸⁴ *Gas Distribution Licence*, cl 5.1.

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