

Regulatory Investment Test for Distribution (RIT-D)

Reliability Corrective Action
The Bowen Hills Network Area

Notice of No Non-Network or SAPS Options

6 November 2026

energex
Part of Energy Queensland

EXECUTIVE SUMMARY

Purpose

Energex Limited (Energex) has determined on reasonable grounds, in accordance with clause 5.17.4(c) of the National Electricity Rules (NER), that there is no non-network option or a stand-alone power-system (SAPS) option that is a potential credible option, or that forms a significant part of a potential credible option, for this RIT-D project to address the identified need.

This notice sets out the reasons for this determination, including any methodologies and assumptions used. Energex publishes this notice in accordance with clause 5.17.4(d) of the NER.

About Energex

Energex Limited (Energex) is a subsidiary of Energy Queensland Limited and manages the electricity distribution network in the growing region of South East Queensland which includes the major urban areas of Brisbane, Gold Coast, Sunshine Coast, Logan, Ipswich, Redlands and Moreton Bay. Our electricity distribution area runs from the NSW border north to Gympie and west to the base of the Great Dividing Range.

Our electricity network consists of approximately 57,000 kilometres of powerlines and 450,000 power poles, along with associated infrastructure such as major substations and power transformers.

Today, we provide distribution services to more than 1.5 million domestic and business connections, delivering electricity to a population base of around 4 million people.

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1. INTRODUCTION

This Non-Network Options Report has been prepared by Energex in accordance with the requirements of clause 5.17.4(e) of the NER.

This report represents the first stage of the consultation process in relation to the application of the RIT-D on potential credible options to address the identified need for the Bowen Hills network area.

In preparing this RIT-D, Energex is required to consider reasonable future scenarios. With respect to major customer loads and generation, Energex has, in good faith, included as much detail as possible while maintaining necessary customer confidentiality. Potential large future connections that Energex is aware of are in different stages of progress and are subject to change (including outcomes where none or all proceed). These and other customer activity can occur over the consultation period and may change the timing and/or scope of any proposed solution.

2. BACKGROUND

2.1. Geographic Region

Victoria Park Substation (SSVPK) supplies 12,320 residential and 2,002 business customers in Bowen Hills, Fortitude Valley, Herston and Spring Hill on the Brisbane CBD fringe. SSVPK was rebuilt in 2014 with two 60 MA transformers and provision for 36 x 11 kV feeders. There is provision for a future third transformer and a total of 60 x 11 kV feeders from this substation. SSVPK has sufficient capacity and future expansion capability, however, there are insufficient conduits to make that capacity available to connect developments in the area. These developments are driven particularly by the RNA (Royal National Agricultural) Showgrounds site redevelopment and by growth in the Bowen Hills area associated with the Queensland State government's Priority Development Area planning objectives. **Figure 1** provides an overview of the current SSVPK supply area.

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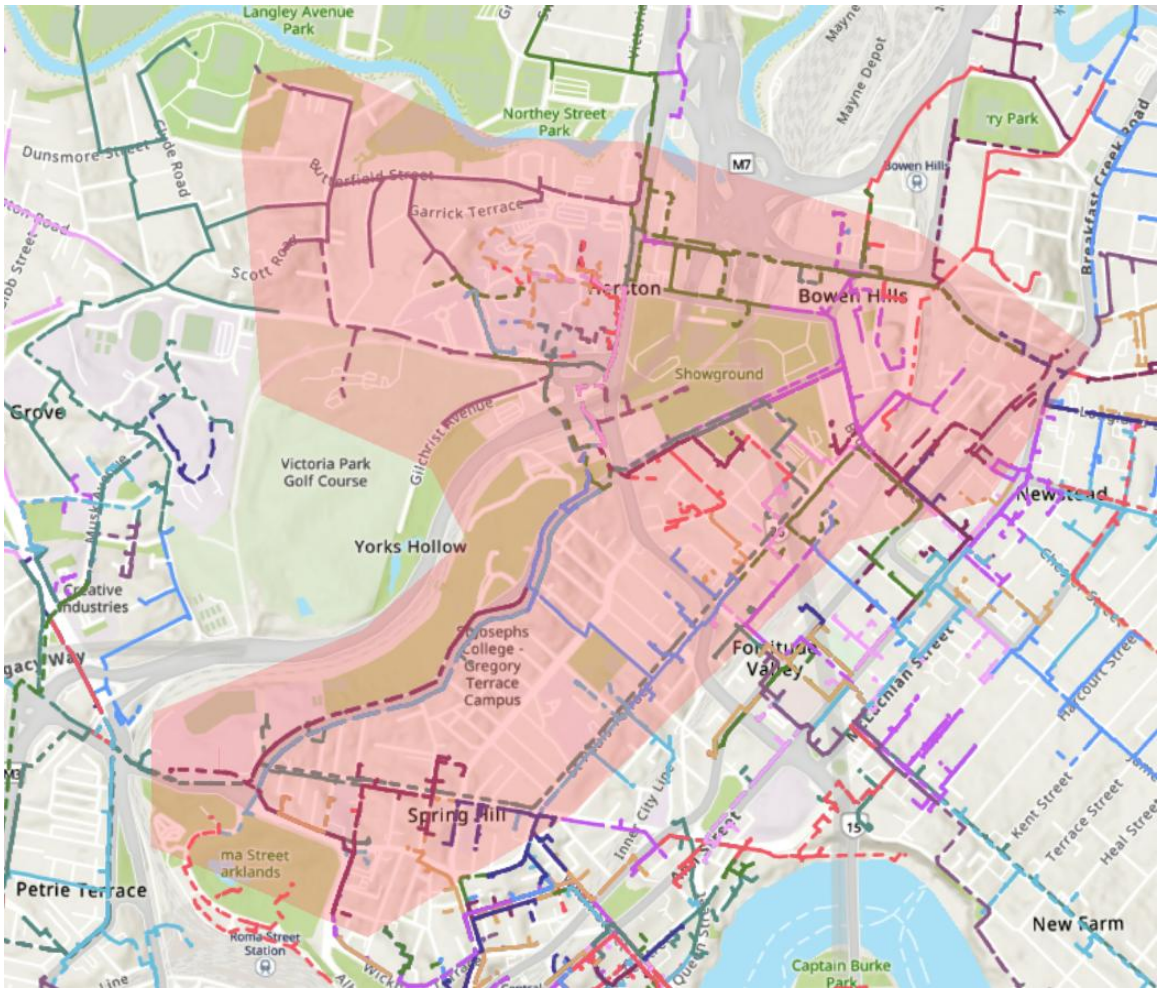


Figure 1 Existing supply area for Victoria Park Substation (highlighted)

Figure 2 represents the Bowen Hills Priority development area. The majority of this area is to the northeast of SSVPK, and that will form the focus area to be enabled with the conduit installation. The railway and inner-city bypass creates a barrier that limits conduiting options.

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Figure 2 Bowen Hills Priority Development Area (PDA). Source: Bowen Hills PDA Development Scheme No.3

2.2. Existing Supply System

Victoria Park Substation (SSVPK) and its existing 11 kV feeders, underground cables, and pit and duct infrastructure supply the Bowen Hills area.

SSVPK was rebuilt in 2014 with two transformers, each rated at 60 MA, and provision for 36 × 11 kV feeders. There is provision for a future third transformer and a total of 60 × 11 kV feeders. The supply area is classified as fringe CBD. Some customers are supplied by three-feeder mesh networks, while the majority are supplied by radial feeders.

The section proposed for new conduits in Bowen Hills contains a mixture of direct-buried 11 kV cables, including cables installed before the 1970s. Existing cable types include 0.12 square inch cables paralleled to form a feeder, 0.25 square inch cables, and 185 and 300 square millimetre

PLYHDPE cables. The pit and duct system includes asbestos concrete/cement ducts installed from the 1960s to the 1980s and 100 mm conduits installed in the 1980s. There are no suitable spare conduits in the section where the new conduits are proposed. The lack of conduits prevents the connection of new customer loads in that area. Additionally, the failure of an existing cable presents a risk because restoration without spare conduits can take longer and cost more, especially where significant civil excavation is required.

2.3. Load Profiles / Forecasts

The loads, load profiles and load durations for individual customers are commercial in confidence. However, the following approximate loads are forecast without identifying specific customers, using publicly available information and comparisons with similar developments and loads elsewhere on the Energex network. The timing of some of these developments is unknown; however, it is expected that the first five developments on the list will be connected to the Energex network by mid-2029. Additional developments not on the list will almost certainly take place. Conduits are needed to connect the immediate developments that Energex is currently working on with customers. They will also provide a path for future customer connections well into the future as part of ongoing development associated with the Bowen Hills PDA.

Site Location	Estimated Approximate Load	Type
O'Connell Tce	3MVA	Residential
O'Connell Tce	4MVA	Residential
O'Connell Tce	1.5MVA	Residential
O'Connell Tce	2MVA	Residential
O'Connell Tce	1.5 MVA	Mixed Use
Gregory Tce	2MVA	Residential
Gregory Tce	1.2MVA	Residential
Anderson St	1MVA	Residential
Baxter	1MVA	Residential
St Pauls Tce	1MVA	Residential
K2 & K3 (RNA)	2MVA	Office
Brookes St	2MVA	Hotel
Campbell	1MVA	Residential
Campbell	1.5MVA	Residential
Mayne Rd	5MVA	Residential
Wren St	1MVA	Residential
O'Connell Tce	0.8MVA	Residential
Total	**31.5MVA**	

Table 1 Projected loads based on known proposed developments

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3. IDENTIFIED NEED

3.1. Reliability Corrective Action

Significant development is planned in Bowen Hills including the redevelopment of the Brisbane RNA showgrounds, part of which will become the Brisbane Olympic and Paralympic Games Athletes' Village.

The Brisbane Athletes' Village will house more than 10,000 athletes and team officials for the Olympics and more than 5,000 for the Paralympics. In addition to the $3.5 billion investment for the Athletes' Village, an additional $287 million is being invested to transform the showground precinct, including a new Machinery Hill grandstand. Energex is currently processing applications to connect the multiple high-rise towers for the Athletes' Village.

In addition to the Athletes' Village, numerous high-rise and other developments are planned in the area, with many proposed developments having received development application approval. Projected upcoming load in the area based on current known developments is estimated at approximately 32MVA. Bowen Hills is a Queensland Government Priority Development Area (PDA) and amendments are currently being made to the PDA to fast-track more than 4,000 homes for thousands of Queenslanders, adding to the 23,000 already planned over the life of the PDA. This increase in housing opportunities complements the Queensland Government's broader investment in the Bowen Hills precinct. As part of the PDA amendments, building height restrictions will also be increased from 30 to 50 storeys. **Figure 3** details known proposed developments within the PDA area.

The identified need creates an opportunity to provide a scale-efficient and cost-effective investment in shared network assets to benefit multiple customers. The timing of the identified need, and so the required timing for credible options to address the need, is determined by when the loads are requesting connection.

The identified need is reliability corrective action to ensure that Energex can continue to adhere to its regulatory obligations, under applicable regulatory instruments, to provide connectivity to customers. Energex is required to connect new customers and maintain the reliability of supply to these customers. To ensure that Energex can continue to meet these requirements, reliability corrective action is required by July 2027. If this does not occur, Energex estimates the probability of failing to adhere to its regulatory obligations would reach unacceptably high levels.

For example:

- Section 66 of the *National Energy Retail Law (Queensland)* requires that Energex must, subject to and in accordance with the energy laws, provide customer connection services for the premises of a customer:
    - who requests those services; and
    - whose premises are connected, or who is seeking to have those premises connected, to the distributor's distribution system.

- Clause 5.2.3(d) of the NER, which includes the requirements that a Network Service Provider must:

  (1) Review and process applications to connect or modify a connection which are submitted to it and must enter into a connection agreement.

  (…)

  (6) Permit and participate in commissioning of facilities and equipment which are to be connected to its network in accordance with rule 5.8.

Therefore, Energex considers that investment in the Bowen Hills area is necessary.



Figure 3 Known proposed developments occurring within the Bowen Hills Priority Development Area (PDA)

4. POTENTIAL CREDIBLE OPTIONS

Energex has considered all options that could reasonably be classified as a credible option without bias to energy source, technology, ownership and whether it is a network option, a non-network option or a Stand-Alone Power System (SAPS) option.

Energex has not identified any viable non-network solutions that would provide a complete or a hybrid (combined network and non-network) solution to address the identified need. Further reasoning as to how Energex came to this determination is provided in Section 6 below.

4.1. Credible Options Identified

Energex has identified one credible network option that will address the identified need.

4.1.1. Option A: Install new conduits in Bowen Hills

This option involves installing a bank of 125 sq mm conduits approximately 600 m long (route length) in the Bowen Hills area to provide network connectivity and future capacity into the area. The works will also include installing new pits and upgrading existing pits. These conduits will allow

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new cables to be installed to progress existing customer applications and connect developments, including the Brisbane 2032 athletes' village, to the network. They will also meet requirements for future development in the Bowen Hills priority development area.

It is noted that an option regarding project phasing was considered, however discounted as not credible. Phasing would involve installing the minimum number of conduits for the one customer connecting in Mid-2027 and then installing additional conduits in approximately 2029 for other customers. Cutting up the same road twice in such a short period would most likely not be supported by council and would also be prohibitively expensive given most of the costs is associated with civil excavation. It also increases risk as additional customers may request connection immediately the conduits are installed.

Option A involves the supply, design and installation of:

- 16 × 125 mm² conduits of approximately 600 m route length in the Bowen Hills area to provide network connectivity and future capacity into the area.
- several new pits and upgrades to existing pits as required.

This option is commercially and technically feasible, can be implemented in the timeframe identified and would address the identified need by facilitating increased customer connections in the Bowen Hills area.

The estimated capital cost of this option is $8.35 million. This includes financial costs incurred in constructing or providing the credible option and costs of complying with laws, regulations and applicable administrative requirements. Operating and maintenance costs over the operating life of the credible option are estimated at approximately $21,000 per annum. This estimate is likely to be on the higher end, as operation cost of conduits and associated pits is expected to be low with minimal and often no maintenance required over their expected life.

The estimated construction timetable is:

- Construction start: as soon as practical at the completion of the RIT-D process.
- Construction completion: 2027

Potential community and social licence considerations associated with this option are discussed in section 5 below. There are not expected to be social licence issues with this option. No additional costs to manage or increase the delivery timeline have been considered in the evaluation of this option.

4.2. Preferred Option

Energex's preferred option is Option A, to undertake works to install new conduits along a route of approximately 600m in Bowen Hills. This will facilitate immediate customer connections and cater for longer term development planned or underway within the Queensland State Government's Bowen Hills PDA.

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5. SOCIAL LICENCE AND COMMUNITY ENGAGEMENT

5.1. Social Licence

Energex has not identified any social licence considerations that have affected the identification and selection of credible options to address the identified need. The scope of works involves installing approximately 600m of conduits in the Bowen Hills area and will also include installing new pits and upgrading existing pits. While there is expected to be some disruption in the area, this will be minimised by doing works outside of busy hours (night works) and undertaking as much work as possible whilst the Story Bridge is closed and traffic is reduced. Works will also be conducted based on agreement with council and compliance with any relevant council conditions. Construction and other infrastructure work in the Bowen Hills area is necessary to facilitate development for, amongst other things, the Brisbane 2032 Olympic and Paralympic Games. Residents and businesses in this area would be aware that ongoing works are planned. Given this, there are not expected to be any specific social licence issues specifically associated with this project.

5.2. Community Engagement

Community segments in the Bowen Hills area include:

- Apartment residents and body corporate committees.
- Property developers and commercial property owners.
- Healthcare institutions and workers.
- Small businesses in hospitality and retail.
- Office-based professional workers.
- Event and entertainment operators associated with the RNA Showgrounds.
- Public transport users, given the area's heavy reliance on rail, bus and active transport

As above, we have not identified any community stakeholders who might reasonably be expected to be affected by the development of this specific project. Ongoing construction and infrastructure works are planned in the area, and the community would be aware of this. While Energex does not anticipate any community stakeholder concerns, should any be identified, these would be addressed as part of the Energex Community Engagement Framework which is integrated into the project workflow.

6. RATIONALE THAT THERE IS NO VIABLE NON-NETWORK OR SAPS OPTIONS

6.1. Consideration of Non-network and SAPS Options

Energex has assessed potential non-network and stand-alone power systems (SAPS) options to address the identified need. Potential credible options must be technically and commercially viable and must be able to be implemented in sufficient time to address the identified need. It has been determined, for the following reasons, that no non-network or SAPS options would be suitable to address the identified need or form part of the solution to address the identified need.

Energex's Demand & Energy Management (DEM) team has assessed the potential non-network alternatives required to defer the network option and determine if there is a viable demand management option to replace or reduce the need for the network option proposed.

Credible options must be technically and commercially viable and must be able to be implemented in sufficient time to satisfy the identified need.

The DEM team has completed a review of options to supply customers wanting to connect and the future planned development associated with the Bowen Hills PDA.

It has been determined that demand management options will not be viable propositions and have been explored in the following sections.

6.1.1. Network Load Control

This project involves installing conduits to facilitate the connection of new customers wanting to connect now and future customers wanting to connect as part of the Bowen Hills PDA. Network Load control is not going to change the need to connect for those customers. Additionally, to implement Network Load control a connection to the network first needs to be established. In short Network Load Control is not a valid or viable solution.

Demand Response

Four methods utilising demand response technology for deferring network investment are: Call Off Load (COL), Customer Embedded Generation (CEG), Large Scale Customer Generation (LSG) and customer solar power systems.

6.1.2. Customer Call Off Load (COL)

COL is an effective technique for deferring network investment where the need is for a short time period. However, in this instance, the need is required to connect on a long-term permanent basis. Call off load has been assessed as not a viable proposition as it will not address the identified need to connect a new customer wanting to connect now and future customers wanting to connect as part of the Bowen Hills PDA.

6.1.3. Customer Embedded Generation (CEG)

CEG is an effective technique for deferring network investment where the need is for a short time period. The primary driver for investment in this instance is customers wanting to connect to the

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network. CEG is not a technically or financially feasible option as it is not a viable option to change the need for the large customers wanting to connect to the network.

6.1.4. Large-Scale Customer Generation (LSG)

LSG sites such as renewable energy generation, solar or wind farms of multiple MW's capacity constitute an opportunity to support substation investment by reducing demand on, and potentially providing reactive power support for substation assets.

This option has been assessed as technically not viable given the ability to install large scale generation in a highly dense urban environment and as there is no known existing or proposed LSG demand response available.

6.1.5. Customer Solar Power Systems

There is an estimated 32MVA of load likely to connect in the area in the coming years. Given the load density and available roof space in a CBD fringe area it is not practical in a highly dense urban environment to install large solar arrays coupled with Battery Energy Storage System (BESS) to provide the support needed. It is noted that the need is driven by customers wanting to connect to the network both in the immediate and longer term.

6.1.6. Consideration of SAPS Options

SAPS are off-grid systems that operate independently from the main network. It typically includes solar panels for electricity generation, a BESS to store excess energy, and a backup generator (often a diesel generator).

Energex considers there is no SAPS option that could form a potential credible option on a standalone basis, or that could form a significant part of the credible option. In particular the load requirements, per the forecast in the Bowen Hills could not be supported by a network that is not part of the interconnected national electricity system. Therefore, a SAPS option is not technically and economically viable.

7. CONCLUSION AND NEXT STEPS

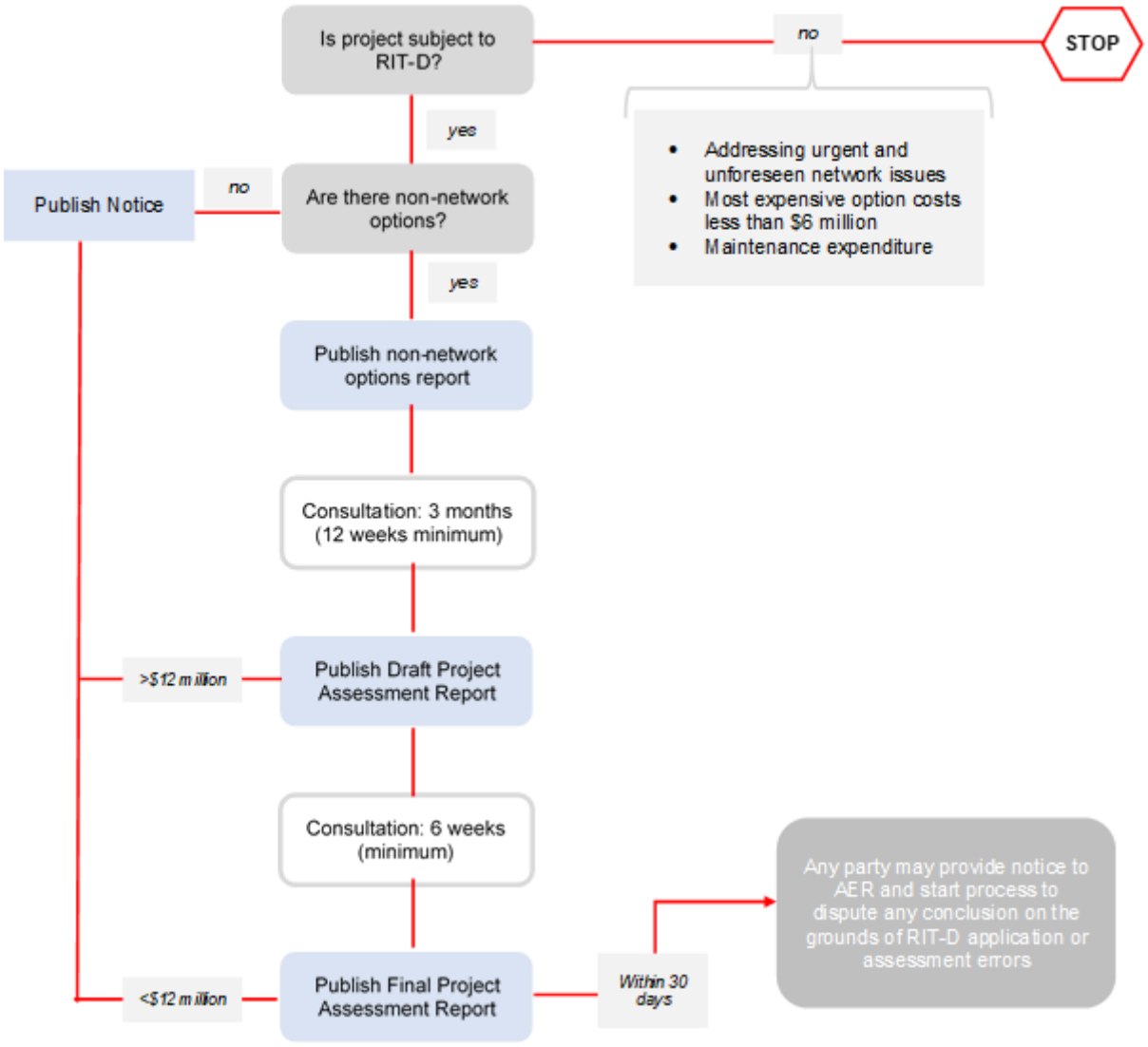
Energex has determined that there would not be a non-network or SAPS option that is a potential credible option, or that forms a significant part of a potential credible option, to address the identified need.

As required, Energex publishes this Notice of No Non-network or SAPS as per NER clause 5.17.4 (d).

As the next step in the RIT-D process, Energex will proceed to publish a Final Project Assessment Report.

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APPENDIX A – THE RIT-D PROCESS



Source: AEMC, *Rule determination: National Electricity Amendment (Replacement expenditure planning arrangements) Rule 2017*, July 2017, p. 64.