

Critical Infrastructure Resilience - Energy

03 June 2024

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Report by the Comptroller and Auditor General: 3 June 2024

This report has been prepared in accordance with Article 20 of the Comptroller and Auditor General (Jersey) Law 2014

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Summary

Introduction

1. Jersey's critical infrastructure can be described as those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact the social or economic wellbeing of Jersey or affect Jersey's ability to ensure national security.
2. There are broadly twelve sectors that could be considered to be critical infrastructure for Jersey as shown in Exhibit 1.

Exhibit 1: Jersey's critical infrastructure sectors

• Chemicals	• Energy	• Space
• Communications	• Finance	• Transport
• Defence	• Food	• Waste
• Emergency Services	• Health	• Water

Source: Jersey Audit Office assessment

3. Ensuring the security and resilience of Jersey's critical infrastructure is a responsibility shared by the States, infrastructure owners and operators. Each have different responsibilities for critical infrastructure depending on the system and/or the nature of the threats to be mitigated. Responses to a threat can involve the asset owner and operator, the technical and operational lead for Government and emergency services or law enforcement. Co-ordination among entities is therefore required to prepare, rehearse and respond to critical infrastructure threats.
4. Significant public funds can be spent responding to emergencies relating to critical infrastructure. It is important for Jersey to have in place an effective resilience framework supported by effective resilience plans and procedures across the States, asset owners and operators.
5. This review has evaluated whether the Government has an effective approach to critical infrastructure resilience for the energy sector that encompasses supporting and requiring asset owners and operators to implement high standards of resilience.

6. Articles 11 and 20 of the Comptroller and Auditor General (Jersey) Law 2014 make provision for me to prepare reports arising from my work and forward them to the Greffier of the States to be laid before the States Assembly. Paragraph 65 of the Code of Audit Practice (December 2023) provides that in determining the content and timing of public reporting I should have regard to potential prejudice to the interests of the States of Jersey or other parties arising from public reporting.
7. Having regard to this provision and the subject matter of this report, I have elected to issue a shorter report than usual, excluding my detailed findings but including the recommendations arising from my work. I am, however, providing relevant officers with a supplementary report that sets out more details of my findings to assist them in responding to the recommendations that I have included in this report.

Key Findings

8. There is no definition of critical national infrastructure in the Island and no cross-cutting infrastructure policy. The bridging Island Plan 2022-25, published in March 2022, includes a strategic proposal to develop a new Infrastructure Roadmap for Jersey.
9. The Government of Jersey's approach to understanding and securing the resilience of the Island's infrastructure has been severely tested by critical incidents over recent years. These include the COVID-19 pandemic, the tragic incident at Haut du Mont, the January 2023 floods, the October 2023 gas outage and the impact of storm Ciarán in November 2023.
10. Jersey imports 98% of all energy supplies. Excluding petroleum products for road, aviation and marine use, 59% of energy consumed from these imports is from low carbon sources.
11. The Government issued a Crisis Resilience Improvement Plan (the Plan) in July 2023, chiefly in response to the independent review of the Government's management of the COVID-19 pandemic. The Plan acknowledges that Government has an underdeveloped risk identification and mitigation system at both operational departmental level and at a strategic Government level.
12. Both before and after the Plan was published, there has been learning from each of the key incidents. The Government has carried out six de-brief exercises but there remains a great deal to do to bring that learning into effect.

13. Work is now in hand to introduce a Jersey Resilience Law. The States are clear that powers need to be prioritised and proportionate to achieve short, medium and long term plans. The current intention is that a new Resilience Law will be introduced in a phased way, starting before the end of 2025.
14. Capacity in the Government to manage resilience is currently very limited and arrangements intended to underpin effective resilience are not yet adequate. The Community Risk Register is not an effective tool in its current format. The Jersey Resilience Forum has not yet successfully made resilience feel like an Island-wide challenge where partners pick up proactive roles and responsibilities.
15. Government arrangements to assure the resilience of energy supply as both a community leader and as a key customer are weak. Arrangements for ensuring the monitoring, reporting and scrutinising of resilience information by the operators and owners of critical infrastructure for energy are not established.
16. The proposed new Resilience Law includes a focus on both anticipating and resisting critical incidents. A significant mechanism intended to provide assurance in these areas as part of the new legislation is the Jersey Resilience Forum's introduction of Resilience Standards. These Resilience Standards introduce new duties on all those likely to be engaged in an emergency response. They are thorough and represent best practice. However, it is not evident that they have been adjusted to take account of the need for a proportionate approach in Jersey.
17. Overall, there is a lack of a coherent, joined up approach across Government. This mitigates against surety of resilience in the energy sector. Roles and responsibilities are not clear enough. There is no single person, team or department responsible for co-ordinating energy matters and there is no requirement or clear expectation for the teams in various departments to work effectively together.
18. The Carbon Neutral Roadmap and, before that, Pathway 2050, set a vision for Jersey's future energy provision in order to meet the challenges of the net zero transition. However, from a resilience perspective, there are significant decisions to be made.

Conclusions

19. A framework and documentation have been put in place to manage critical incidents and promote resilience. A new Resilience Law is proposed, based on good practice in other jurisdictions. These developments have potential to enhance controls, manage risk, provide assurance and promote resilience.
20. However, urgent action is required to put in place a robust Community Risk Register including energy infrastructure risks owned and managed by the Government and individual suppliers. Effective relationships must be built between the Government and all energy providers to enable the Jersey Resilience Forum to function effectively in respect of energy infrastructure risks.
21. Critical incidents in recent years should be the catalyst for the Government and its partners to address weaknesses in managing energy resilience. There is work to be undertaken by Government to enable it, as community leader, to provide Islanders with assurance on energy supply, fuel storage and distribution. Clear, resourced action plans should be developed to demonstrate how capacity is to be enhanced in an integrated way which balances short- and medium-term risk management and the needs and opportunities of future energy policy.

Objectives and scope of the review

Objectives

22. This review has evaluated whether the Government has an effective approach to critical infrastructure resilience for the energy sector that encompasses supporting and requiring asset owners and operators to implement high standards of resilience.
23. The audit has considered, for the energy sector, whether:
 - potential critical incidents, other problems and vulnerabilities are well identified, agreed and risk assessed
 - governance arrangements in place to administer critical infrastructure protection policies (policies aimed at reducing the vulnerabilities of and increasing the resilience of critical infrastructure):
 - are effective in delivering the States of Jersey's objectives and intended outcomes; and
 - achieve 'best practice' performance; and
 - the underpinning systems and processes – for example resilience plans, testing and compliance activities – are:
 - in place across Government, asset owners and operators and are properly monitored
 - consistent with delivering critical infrastructure protection objectives; and
 - in line with best practice.
24. The audit criteria used as part of the review were drawn from UK's National Infrastructure Commission (NIC)¹ May 2020 review of the UK's economic infrastructure: *Anticipate, React, Recover*. This considered six elements of resilience (see Exhibit 2).

¹ The Commission provides the UK government with advice on major long term infrastructure challenges

Exhibit 2: UK National Infrastructure Commission's six elements of resilience



Source: *Anticipate-React-Recover-28-May-2020.pdf (nic.org.uk)*

Scope of the energy sector considered

25. The Jersey energy market is characterised by minimal or no competition in the electricity and gas sectors and is largely unregulated. All providers are subject to relevant industry and health and safety standards. The extent of regulation is a policy choice by Government. Limited regulation creates a risk that current or future consumer interests are not sufficiently protected unless other controls are put in place.
26. Jersey imports 98% of all energy. The remaining 2% is electricity generated by the Energy Recovery Facility and Jersey Electricity solar panels. Total energy supplied in 2022 was 139,055 Tonne of Oil Equivalent (TOE) with a total consumption figure of 135,976 TOE².

² TOE represents the quantity of energy released through burning one tonne of crude oil: 1 TOE = 11,630 kWh or 10 million kilocalories.

27. Petroleum products accounted for 58.5% of consumption in 2022 of which 47,370 TOE were petrol and diesel fuels used for road, aviation and marine purposes. The analysis of total consumption by fuel type and sector (including petrol and diesel for road, aviation and marine use) is shown in Exhibits 3 and 4.

Exhibit 3: Energy consumption by fuel type 2021 and 2022

Fuel type	2021 TOE	2022 TOE	2022 %
Petroleum products	83,368	79,487	58.5%
Gas	4,965	4,283	3.1%
Electricity	54,708	52,206	38.4%
Total	143,041	135,976	100%

Source: Statistics Jersey Energy Trends Report 2022

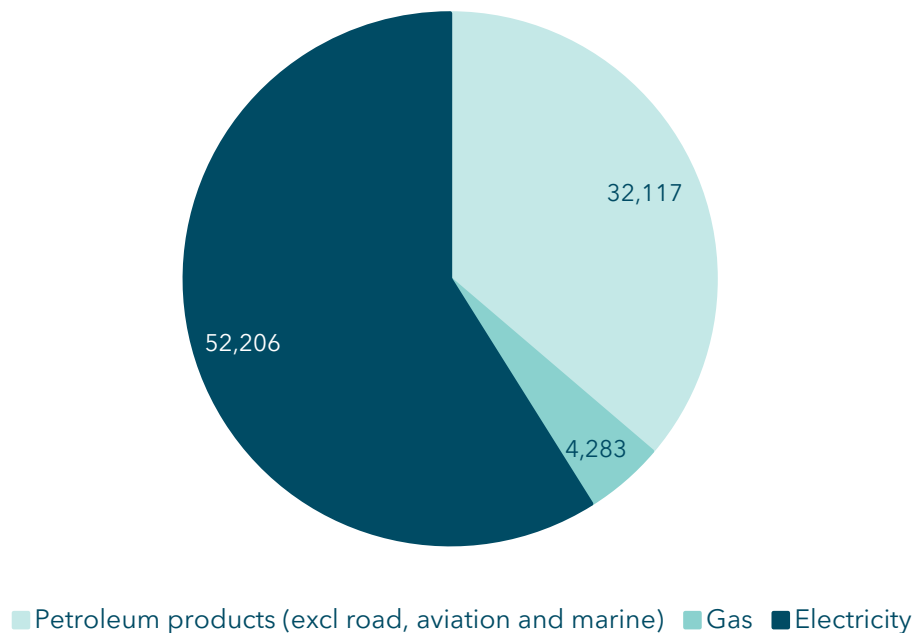
Exhibit 4: Energy consumption by sector 2021 and 2022

Sector	2021 TOE	2022 TOE
Industry and Government	38,567	36,589
Air and Marine	7,687	12,568
Road	36,441	34,802
Domestic	60,346	52,017
Total	143,041	135,976

Source: Statistics Jersey Energy Trends Report 2022

28. Excluding petroleum products for road transport, aviation and marine use, the total energy consumption in 2022 was 88,600 TOE (see Exhibit 5).

Exhibit 5: Consumption by fuel type 2022 (excluding road, aviation and marine use)



Source: Statistics Jersey Energy Trends Report 2022

Electricity supply

29. Jersey Electricity (JE) is the Island's key electricity provider, with the Government of Jersey as a major shareholder owning 62% of the Ordinary Share capital. The majority of the electricity is imported from low carbon sources in France (nuclear and hydroelectric power). Generation in-Island is from the Government-owned Energy from Waste Plant and from solar sources. The power station at La Collette and the JE site at Queens Road are also available to provide back-up capacity if required.
30. The three undersea cables provide total import capacity of 203mw (mega watts) for Jersey. Two cables (Normandie 1 and 2) use the same route from Surville to Archirondel. Normandie 3, installed in 2014, follows a different route from Armanville Beach to Grouville Bay.

Gas supply

31. Gas is supplied and distributed by the Islands Energy Group (IEG), which includes the Jersey Gas Company Limited (Island Energy (Jersey) (IEJ)) as well as gas providers in Guernsey and the Isle of Man. The gas used in Jersey is Liquefied Petroleum Gas (LPG) which is produced off-Island. After temporary storage in

European refineries, it is transported to Jersey's bulk storage terminals at the harbour by tanker ships.

32. Mains gas is manufactured from the LPG at the gas production plant at La Collette and then distributed through the underground distribution network for connected users. Where users are not connected to mains, LPG is distributed in cylinders or by bulk delivery in a road tanker.
33. As a customer, the Government is a large part of the gas usage on the Island - for example in school heating systems, to heat swimming pools and for the crematorium.

Petroleum products

34. Petroleum products including road, aviation and marine fuel represent 58% of the overall energy supply. Fuel Supplies (CI) Ltd is a subsidiary of the Rubis Group and the largest supplier of heating oil in Jersey. La Collette Terminal Ltd is also part of the Rubis Group and owns the infrastructure at the fuel terminal at La Collette which handles and stores bulk fuels delivered by ship from UK refineries.
35. Domestic heating oil and other petroleum products are also supplied by ATF Fuels and Petroleum Distributors (Jersey) Limited.

Appendix One

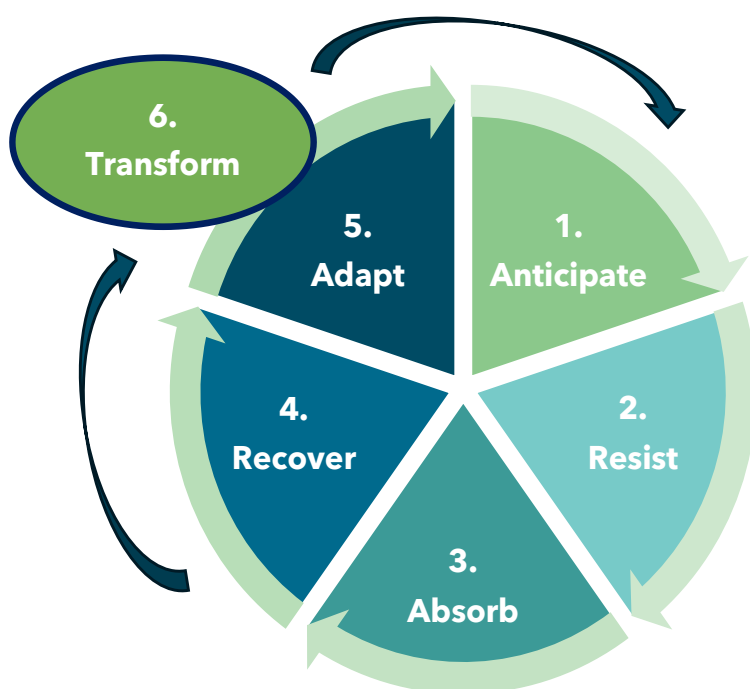
Audit Approach

This audit used a combination of a:

- Results-oriented approach
- Problem-oriented approach; and
- System-oriented approach.

The audit used the following criteria:

- To assess relative performance during our audit, my review used best practice criteria developed by the UK's National Infrastructure Commission (NIC)³. The Commission's May 2020 review of the UK's economic infrastructure: *Anticipate, React, Recover* considered six elements of resilience.



1. Prepare in advance to respond to shocks and stresses
2. Actions taken in advance to help withstand and endure shocks and stresses
3. Actions that aim to lessen that impact
4. Actions that help quickly restore expected levels of service
5. Actions that modify the system to enable it to deliver services in the face of changes
6. Actions that regenerate and improve infrastructure systems

³ The Commission provides the UK government with advice on major long term infrastructure challenges

- To assess the context of the business continuity documentation provided to me, I used a framework of good practice adapted from the *UK Government Business Continuity Management Toolkit* linked [here](#).

The approach included the following key elements:

- key document request to Government
- follow on document request to energy companies; and
- a series of Government and energy company interviews / requests for input by correspondence.

The documents reviewed included:

- ATF Fuels: Business Continuity Plan
- Building a Resilient Jersey: review of the aim, objectives, scope and format of the proposed new Civil Contingencies Law in the Bailiwick of Jersey - November 2023
- Community Risk Register
- Corporate Risk Register and Enterprise Risk Management log
- Crisis Resilience Improvement Plan
- Electricity (Jersey) Law 1937
- Emergency Powers and Planning Law 1990
- Emergency Response Plan LCT FSCI (Redacted)
- Freedom of Information requests and responses
- Future Energy Mix options - review by Oxera 2021
- Health Protection Review
- Incident de-briefs:
 - Gas outage
 - Storm Ciarán
- Islands Energy Group:
 - Business Continuity and Disaster Recovery Plan

- Crisis Management and Communication Plan (Draft)
 - Emergency Operations documents (various)
- Jersey Electricity:
 - Annual Report and Accounts 2023
 - Business Continuity (August 2023)
 - Operational Plans (Emergency, Winter)
 - Risk Management Framework
 - Supply Security
- Jersey Energy Market Report - Policy Centre Jersey 2023
- Jersey Gas Company Annual Accounts 2022
- Jersey Gas Company (Jersey) Law 1989
- Jersey Resilience Forum:
 - emergency response and recovery documents
 - minutes of Executive and Delivery Group 2021 - 2023
 - Standards
 - Terms of Reference
- La Collette 'Industrial Area' Multi Agency Off-Site Emergency Plan (2015)
- P74 Carbon Neutral Roadmap
- Pathway 2050: Energy Plan Summary
- Petroleum (Jersey) Law 1984
- Public Accounts Committee:
 - Covid Response Report
 - Fuel Farm Lease Renewal
- Scrutiny Panel documents
- States Assembly minutes

- States of Jersey and Jersey Electricity - Relationship Agreement 2014
- Statistics Jersey - Energy Trends reports
- States of Jersey Fire and Rescue - documentation concerning Fire Safety Protection work at La Collette

The following people contributed information through interviews or by correspondence:

- All The Fuels (ATF): Director
- Chief Fire Officer
- Chief Inspector, Jersey Care Commission
- Chief Officer, Infrastructure and Environment
- Chief Officer, Justice and Home Affairs
- Director of Housing, Environment and Placemaking
- Director of Property Holdings
- Director of Public Health
- Emergency Planning Officer and Assistant Emergency Planning Officer
- Executive Consultant, Cabinet Office
- Head of Risk, Government of Jersey
- Head of Shareholder Relations, Treasury and Exchequer
- Islands Energy Group
 - Chief Executive Officer
 - Managing Director
- Jersey Electricity:
 - Asset Manager
 - Chief Operating Officer
- Petroleum Distributors Jersey: Group Executive Director, Roberts Garages

- Rubis:
 - Head of Finance, La Collette Terminal Ltd
 - Head of Operations, La Collette Terminal Ltd
 - Managing Director, Fuel Supplies (CI)
 - Marketing and Communications, Fuel Supplies (CI)

The fieldwork was carried out by affiliates working for the Comptroller and Auditor General, from January to May 2024.

Appendix Two

Summary of Recommendations, Work planned that should be prioritised and Areas for consideration

Recommendations

- R1** Review actions arising from the Crisis Resilience Improvement Plan in 2023 to ensure they are progressing as required.
- R2** Prepare 'whole system' action plans with clear responsibilities and timelines to deliver the improvements identified in all recent critical incident de-brief reports.
- R3** Engage with all external partners to reinvigorate the Jersey Resilience Forum, improve communication and mandate attendance at future meetings.
- R4** Undertake a review to ensure that Business Continuity Plans for all Government assets demonstrate good practice, including in consideration of energy infrastructure resilience.
- R5** Undertake a thorough and urgent review of the emergency planning arrangements for the La Collette site including contributions from all stakeholders and using expert input.
- R6** Introduce formal procedures to ensure that an updated La Collette emergency response plan is subject to ongoing monitoring, testing and review with all partners.
- R7** Ensure that energy infrastructure owners have high quality, proportionate and tested emergency planning and business continuity management arrangements in place that assure:
- robust risk management of critical infrastructure resilience such that domestic and business customers can expect safe, reliable supplies; and
 - energy suppliers contribute positively to Islanders' sustainable wellbeing.
- R8** Join up energy related workstreams across Government and the Jersey Resilience Forum to ensure that key individuals and groups have a common and complete picture, including of resilience issues, risks and opportunities.
- R9** Ensure that the Corporate Risk Register adequately records the risks in the area of energy provision and resilience.

- R10** In line with the development of a new Resilience Law, update Laws governing energy provision so that they are aligned, fit for purpose and drive high standards of resilience.
- R11** Ensure that the Resilience Standards and the updated Community Risk Register address the weaknesses I have identified, so that all energy infrastructure owners and users are compliant with the need to:
- set out and communicate the testing regimes that underpin infrastructure resilience
 - report the outcomes of the testing and any subsequent improvement plans through the Jersey Resilience Forum, to inform the Corporate Risk Register; and
 - establish and communicate high quality business continuity management arrangements, including all elements of a recognised good practice approach.
- R12** Ensure that data requirements and data sharing protocols, including those needed to comply with the Resilience Standards and support the Community Risk Register, are in place in a risk-based way which seeks to anticipate the needs of critical incident responses.

Work planned that should be prioritised

- P1** Prepare an Infrastructure Roadmap to support resilience and sustainability of the utility infrastructure. This should be based on a robust understanding of existing infrastructure risks and opportunities and, taking into account future needs, identify investment priorities.
- P2** As a matter of urgency, complete a full, stakeholder-wide review of the Community Risk Register (CRR) to ensure that a relevant and fit-for-purpose CRR is produced, owned and maintained within the Enterprise Risk Management framework by the end of 2024.
- P3** Complete consideration of the business case for additional resources to ensure sufficient capacity to manage the Emergency Planning function in future.
- P4** Re-visit consultation on the Resilience Standards to ensure that all stakeholders have had an opportunity to comment. Feed back to stakeholders on how their ideas have been responded to.

Areas for consideration

- A1** Review the membership of the Jersey Resilience Forum Executive and the Jersey Resilience Forum Delivery Group to ensure that oversight arrangements can be effective.
- A2** Consider the introduction of an energy resilience workstream as part of the work of the Jersey Resilience Forum Delivery Group.



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