CNI Sectors

Introduction to CNI

So what is CNI?

CNI stands for Critical National Infrastructure but what is that exactly?

Public Sector

- Defence
- Emergency Services
- Government
- Health sectors

Private Sector

- Chemicals
- Civil Nuclear
- Communications/Space
- Energy
- Finance
- Food
- Transport
- Water

Civil Nuclear

The civil nuclear sector facilitates nuclear functions for non-military purposes. This is one of the highest priorities within the UK critical national infrastructure and encompasses 4 key areas: (NCSC, 2022)

- Electricity generation sites
- Nuclear decommissioning and hazard reduction
- Transportation of nuclear material

Transport

The *transport sector* facilitates the movement of people and goods both within the UK and internationally via the UK. Other functions related to transport, such as building new roads, are the responsibility of the devolved administrations. Cyber security policy for the transport sector resides with the department for transport (DFT). The transport sector comprises 4 key areas: (NCSC, 2022)

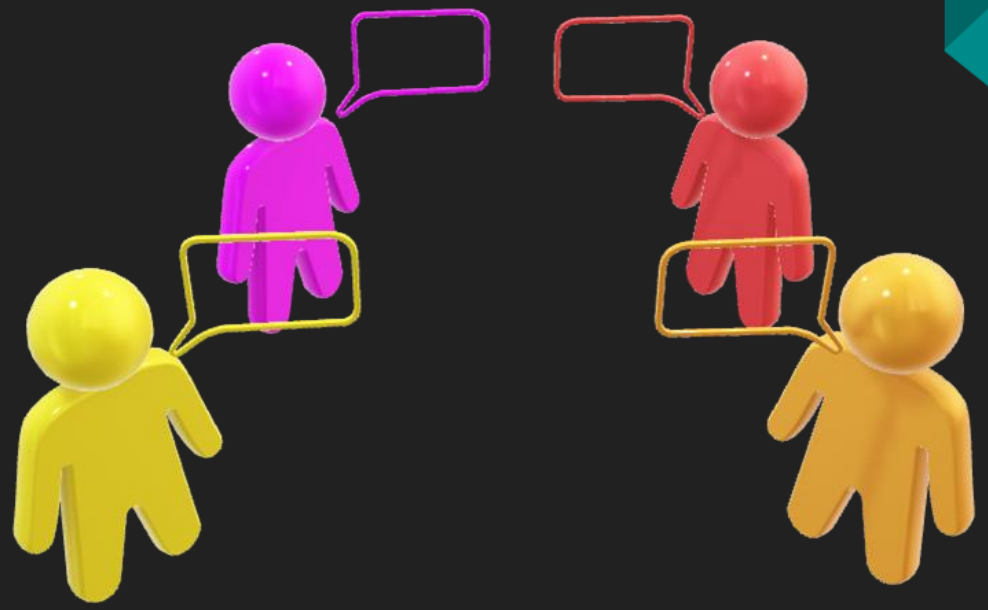
- Civil aviation
- Rail
- Road
- Maritime

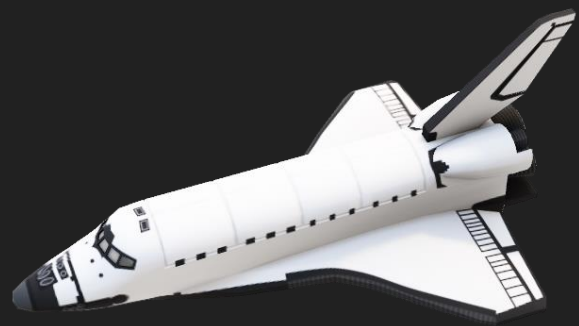
Communications

The communications sector allows UK citizens and businesses to communicate with each other both physically and digitally. (NCSC, 2022)

There are 5 key areas in this sector:

- Internet
- Media
- Broadcast
- Telecommunications
- Space





Energy

The energy sector is responsible for providing the functions required to power our homes and businesses. This increasingly includes the smart use of technology, such as smart meters. Whilst critical services are our main focus, we also cover key supply chain dependencies. The energy sector is divided into 5 key areas: (NCSC, 2022)

- Upstream oil & gas
- Downstream oil
- Downstream gas
- Electricity
- Smart energy

Government Criticalities Knowledge Base Flyer

(CPNI, 2019)

Improving our understanding of Critical National Infrastructure

The UK's Critical National Infrastructure (CNI) is increasingly interconnected and interdependent, making it harder for government to understand and manage the risk faced by the UK.

Government has developed a new methodology to collect this data – the Criticalities Process – and is building a new tool to visualise and interrogate the data produced – the CNI Knowledge Base.

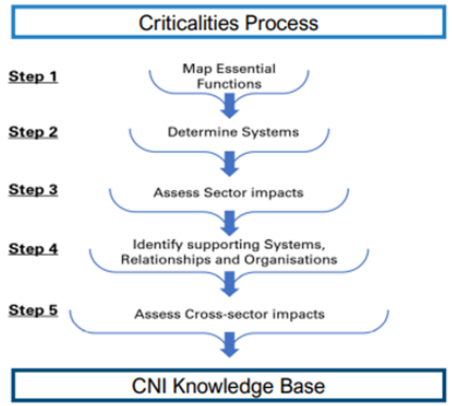
The opportunity for the UK

An accurate, shared understanding of the most critical infrastructure in the UK will enable government to better understand and better manage the risk faced by our CNI.

Our world-leading approach will provide the UK with the tools it needs to take data-driven decisions to improve our resilience and protect our citizens' way of life now and in the future.

The Criticalities Process

Gives risk owners in government (i.e. each sector's Lead Government Department) a common approach to collect and structure data on the CNI they are responsible for. The process supports the systematic identification of the Essential Functions, the Critical Systems that provide them (and their interdependencies), and the Organisations that operate those systems. This information is tied to the impacts that a system's failure would have (both within and across sectors).



The CNI Knowledge Base

The CNI Knowledge Base is the 'Single Source of Truth' for UK CNI, enabling government analysts to visualise the Criticalities data. This software lets risk owners view UK CNI on a map or as a network graph, with interdependencies mapped across it.

The tool and data are held in a secure environment, accessed only by appropriately cleared government officials.

How this helps

Supporting government in this work means you are helping protect the functions that everyone in the UK relies on every day to live and to work. This work will also help us help you:

- We can **provide you with targeted, practical advice** on the most critical technologies and products within the CNI
- We will be able to **make better-informed risk management decisions**, taking into account the cost and benefit of potential policies
- We will help equip you with **better evidence to catalyse change** within your organisations, including at board level

Cabinet Office

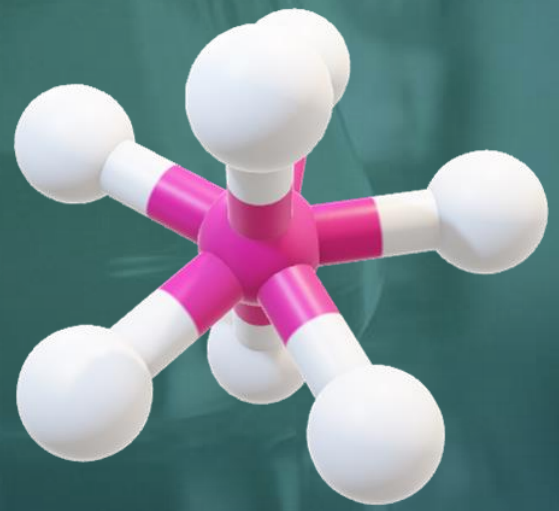
National Cyber Security Centre
a part of GCHQ

CPNI
Centre for the Protection of National Infrastructure

Chemicals

The chemicals sector helps to protect the manufacture and supply of raw materials. The work within this sector is interlinked with both CNI and non CNI sectors, from aerospace and automotive to pharmaceutical and cosmetics. The chemicals sector has 2 key areas: (NCSC, 2022)

- Supplying raw materials
- Manufacturing



Food

The *food sector* manages all stages of food supply from research and technology, farming practices, manufacturing, to the supply routes which allow the food to be distributed and delivered to the consumer via retail or catering. The food sector is one of the biggest the manufacturing sectors in the whole of the UK it brings in an annual turnover of 100 billion pounds. It has 5 key sectors that allows it to run smoothly (NCSC, 2022)

These 5 food sectors are:

- Primary producers (e.g. Farmers and fishermen)
- Food retail (e.g supermarkets and wholesale retailers)
- Food service (e.g. cafes restaurants)
- Food logistics (e.g. distribution centres transportation and logistics
- Manufacturers (e.g. factories, production plants, refineries)

Water

The water sector provides the UK with clean water that is safe to drink and treats waste-water. In England, water companies are privately owned and operate as regional monopolies. There is no competition for domestic water supply. In the devolved administrations (Scotland, Wales and northern Ireland), water companies are still in public ownership and report to their respective administrations. The water sector has 2 key areas: (NCSC, 2022)

- Water supply
- Wastewater treatment
- Flood control

Finance

The *finance sector* provides the function to manage money in the UK. The finance sector is a major contributor to the UK economy, and the UK is a world leading financial services centre with key elements of the global financial system based here. Financial firms and infrastructure provide essential services to citizens, businesses and the government. The Finance sector has 3 key areas: (NCSC, 2022)

- Finance authorities (HMT, Bank of England, FCA, PRA, etc.)
- Financial services (Retail & Investment Banking, Payment systems and services, Exchange, clearing and settlements, etc.)

So why does CNI matter?

If any of these critical services get interrupted it could lead to damage of our economy.

UK CNI Third Report 2017-19

"The cyber threat to the UK's CNI is growing. It is also evolving hostile states are becoming more aggressive in their behavior, with some states— especially Russia— starting to explore ways of disrupting CNI, in addition to conducting espionage and theft of intellectual property." (Parliament.uk, 2018)

Conclusion

- The loss or compromise of CNI would result in major negative impact on essential services, leading to severe economic or social consequences or to loss of life. (NCSC, 2022)
- In conclusion, we hope that viewing our presentation we have been able to give you a better insight into what Critical National Infrastructure is, and what are some of the operations are performed in the public and private sectors and how they enable people to live life to its fullest.

Any Questions?

References

CPNI (2019). *Critical National Infrastructure | CPNI | Public Website*. [online] Cpni.gov.uk. Available at: https://www.cpni.gov.uk/critical-national-infrastructure-0 [Accessed 8 Feb. 2022].

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Parliament.uk (2018). *House of Lords House of Commons Joint Committee on the National Security Strategy Cyber Security of the UK's Critical National Infrastructure Third Report of Session 2017-19 Report, together with formal minutes relating to the report*. [online] Available at: https://publications.parliament.uk/pa/jt201719/jtselect/jtnatsec/1708/1708.pdf [Accessed 8 Feb. 2022].