

JRC 14 November 2024
Accelerating the Net Zero Transition



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National Preparedness Commission and
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Regulating for Resilience: a CNI perspective

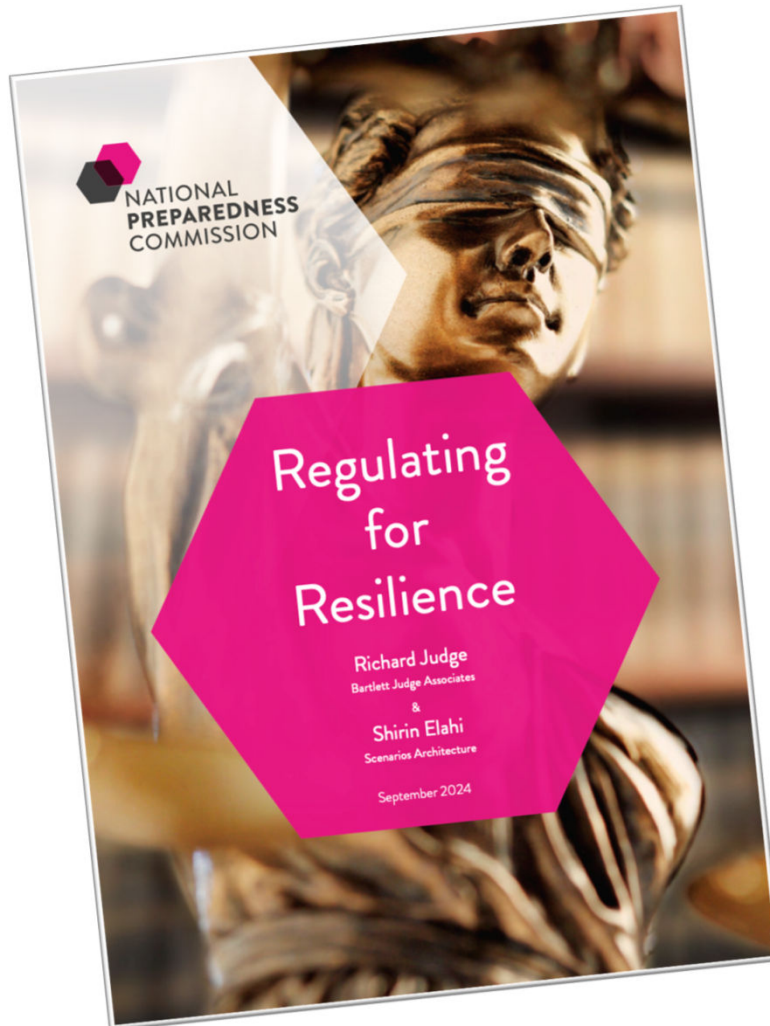
Shirin Elahi

Scenarios Architecture

Richard Judge

Bartlett Judge Associates

NPC report: Regulating for Resilience



Foresight review of the future of regulatory systems

Regulating in a disruptive world

March 2021
Lloyd's Register Foundation
Report Series: No. 2021.1

✕ Safer Complex Systems
Cross-Borders

EngineeringX

Beyond the boundaries: characterising situational uncertainty in complex systems

By Dr Richard Judge, Shirin Elahi

✕ Safer governance of complex systems reports

EngineeringX

Regulation fit-for-complexity

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CNI: the mismatch

21st



20th



19th



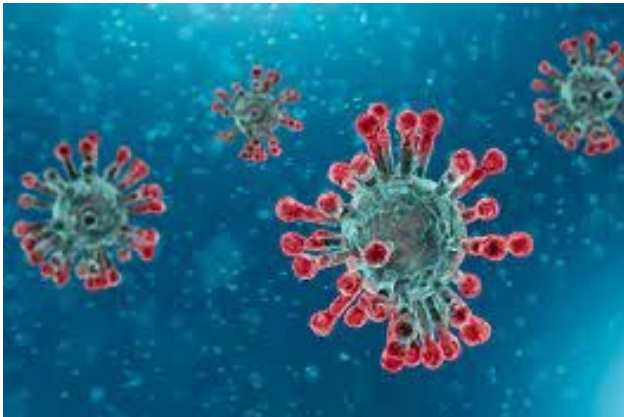
Today's regulatory context

- systemic;
- networked;
- transboundary;
- interdependent;
- accelerating;
- unpredictable...

...exacerbating existing regulatory vulnerabilities

...posing new challenges to **resilience**

The new regulatory context



The next pandemic...?



A new global discourse...?



Further system failure...?



The next cyber incident...?



The future of e-waste...?



More extreme weather...?

Limits of regulation: four problems

Prioritisation

- Nice to have vs critical for function
- Adaptive capacity to major change
- Inbuilt assumptions that resources exist

Time

- Slow vs fast variables
- Inbuilt bias to short-termism
- Mismatched timeframes

Boundaries

- Greatest complexity at boundaries
- Essential function/ whole system view
- Blend of tangible & intangible systems

Emergence

- Unpredictable, unknowable
- Cause and effect indeterminable
- Fundamental shift in context/ mindset

Limits of regulation: Prioritisation

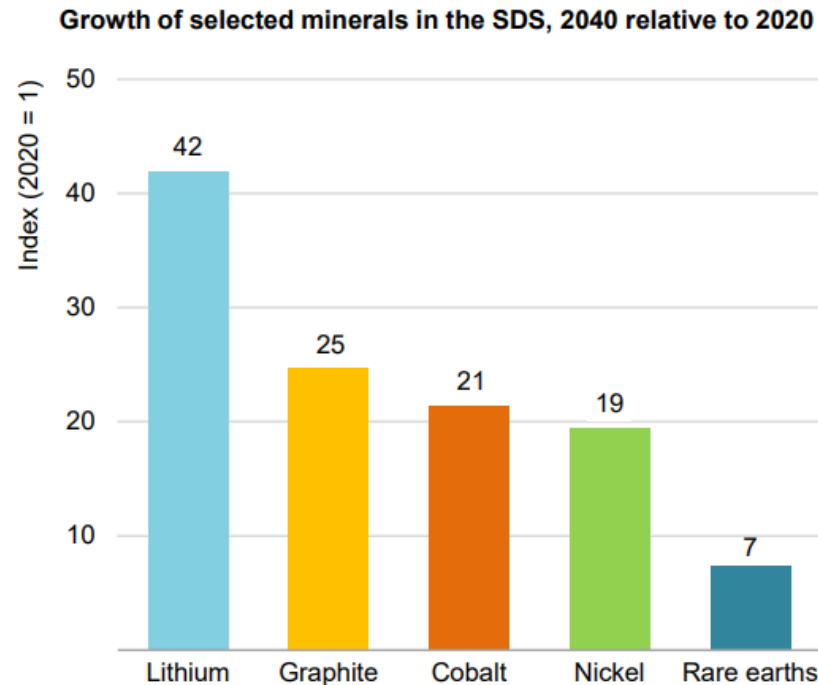
OPTIMISATION
EFFICIENCY
CONTROL



RESILIENCE
REDUNDANCY
ADAPTABILITY

- Nice to have vs critical for function
- Adaptive capacity to major change
- Inbuilt assumptions that resources exist

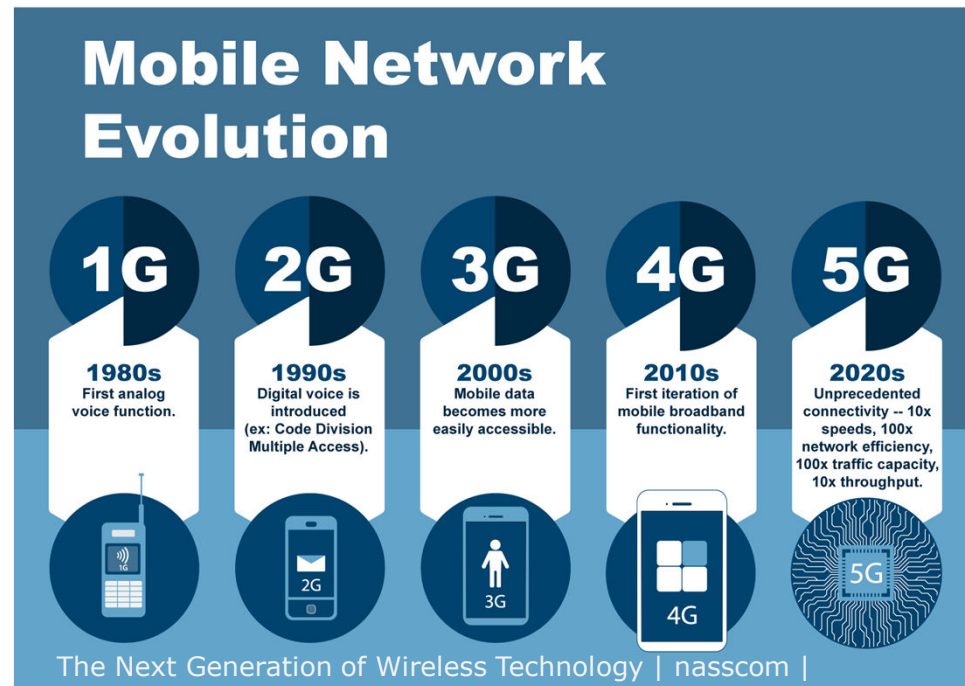
Limits of regulation: Boundaries



IEA, 2022: The Role of Critical Minerals in Clean Energy Transitions

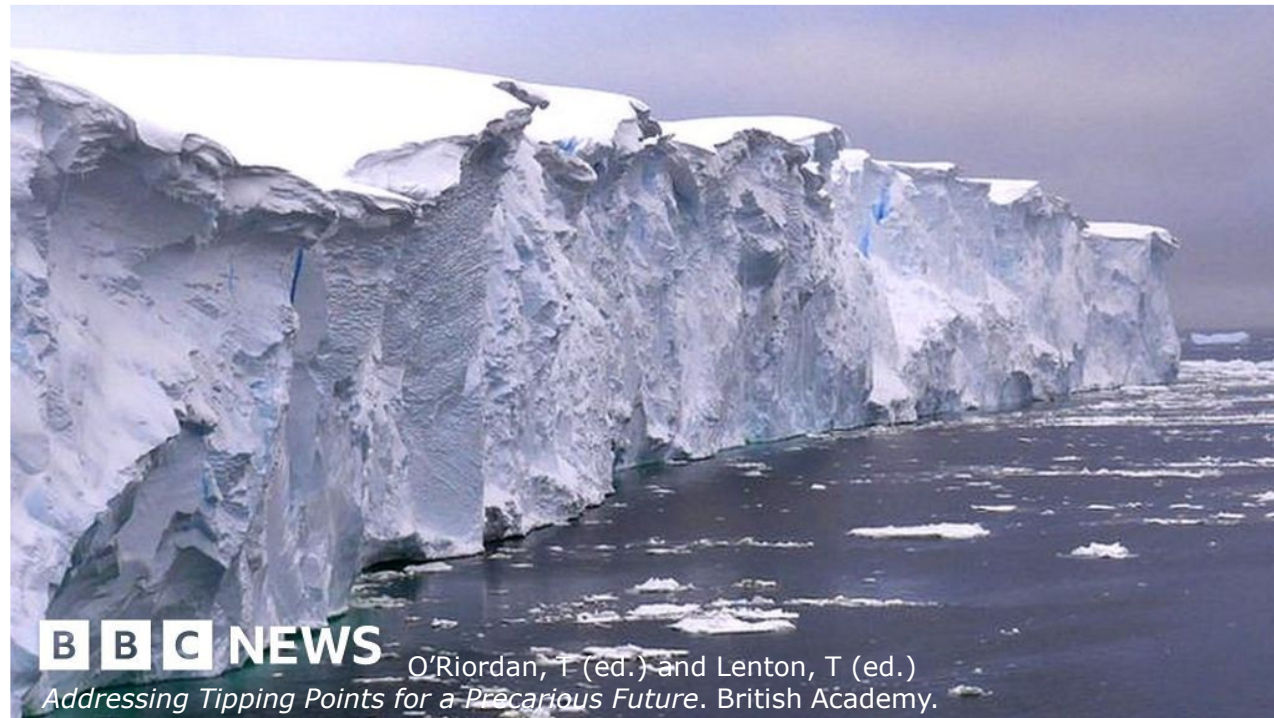
- Greatest complexity at boundaries (e.g. embodied energy)
- Essential function/ whole system view
- Blend of tangible & intangible systems

Limits of regulation: Time



- Slow vs fast variables
- Inbuilt bias to short-termism (and inbuilt obsolescence)
- Mismatched timeframes

Limits of regulation: Emergence



- Unpredictable, unknowable (e.g. climate tipping points)
- Cause and effect indeterminable
- Fundamental shift in context/ mindset

Limits of regulation: Emergence



Edelman (2023) *Edelman Trust Barometer*.

Social polarization is driven by distrust in government, a lack of shared identity, systemic unfairness, economic pessimism, distrust in media and societal fears

<https://jasonnparkinson.com/2019/06/JNP20110807006.jpg>

- Unpredictable, unknowable (e.g. social tipping points)
- Cause and effect indeterminable
- Fundamental shift in context/ mindset

Regulating for whole-system resilience

Three new elements:

- National body: leadership, governance, design of whole-system landscape;
- System-wide overview map: delivery of essential function;
- Polycentric regulatory system-of-systems: multiple semi-autonomous decision centres.



A new mindset: acknowledge fundamentally different contexts & limits to current regulation.