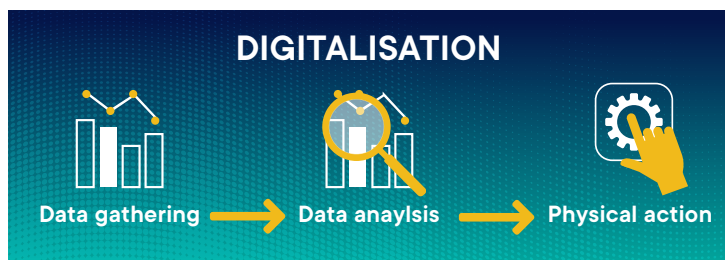


# Energy Applications within IoT and Digitalisation Strategies

The 4E Electronic Devices and Networks Annex (EDNA) provides policy guidance to members and other governments aimed at improving the energy efficiency of *connected devices* and the *systems* in which they operate. EDNA is focussed on the increased energy consumption that results from devices becoming connected to the internet, and on the optimal operation of *systems of devices* to save energy.

This policy brief summarises the key findings of the EDNA report *Energy Applications within IoT and Digitalisation Strategies*. The term ‘internet of things’ (IoT) describes the widespread proliferation of internet-connected devices. These devices are becoming increasingly common and are predicted to be everywhere in years to come.

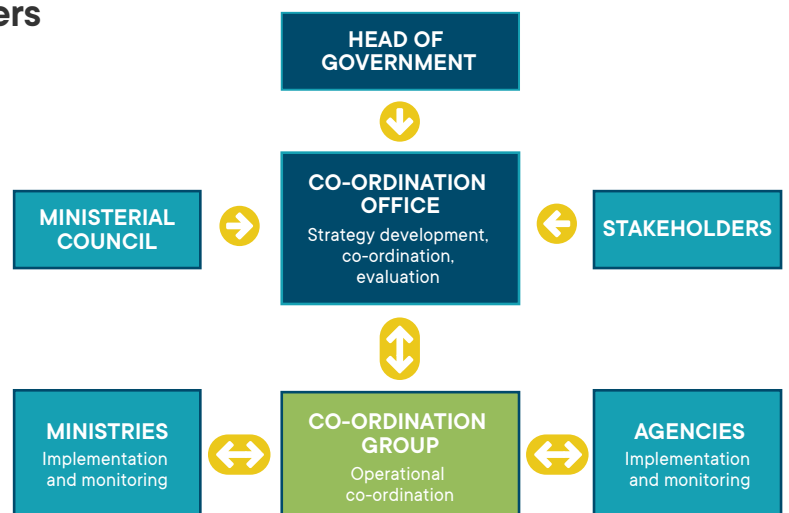


IoT is a key part of the digital transformation of our society. Digitalisation involves the transition from an industrial age, characterized by analogue technologies, to an age of information and knowledge, characterized by digital technologies and digital business innovation.

Many countries and regions have developed strategies aimed at stimulating IoT or digitalisation. However not all specifically include the opportunities for a digitalised *energy system*. The purpose of the EDNA report is to provide guiding principles to policy makers for the development of digitalisation strategies that incorporate *demand flexibility* and *intelligent efficiency* applications as key objectives.

## Observations for Policy Makers

- IoT and digitalisation are complex topics, and over-arching strategies are required in order to take advantage of the opportunities and benefits on offer.
- Demand flexibility and intelligent efficiency should be the primary focuses of any IoT or digitalisation strategy, and it may be advantageous to develop standalone strategy(s) targeting these applications.
- An effective strategy should address issues such as R&D, infrastructure development, interoperability standards, cybersecurity/privacy measures, as well as increasing ‘digital literacy’.
- A strategy should have clear objectives and measurable deliverables, but must remain flexible so as to adapt to rapid technology innovation, with in-built processes for monitoring and revision.
- National or regional government should lead the development of any strategy in this area, but should involve a wide range of stakeholders in the process.



### MORE INFORMATION

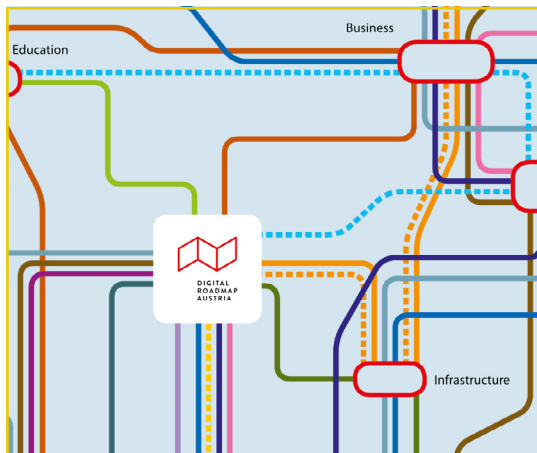
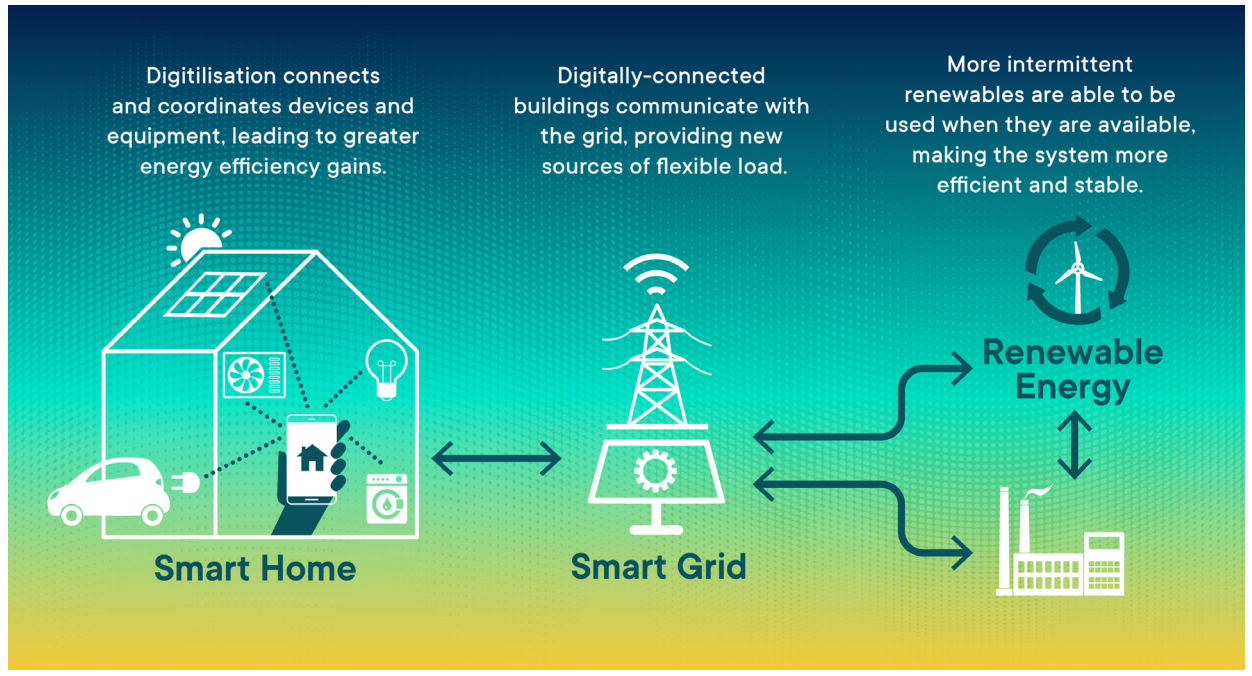
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The EDNA report and further information is available from the **EDNA website** and by contacting the EDNA operating agent at [steve@beletich.com.au](mailto:steve@beletich.com.au)

## Key Findings

### Key benefits of a digitalised energy system

A 'digitalised' energy system should allow IoT systems and other energy-using devices to provide demand flexibility to the energy grid, as well as saving energy ('intelligent efficiency'). Demand flexibility is used to match energy loads with the variable generation patterns of renewable energy. Intelligent efficiency involves systems of connected devices and sensors working together to optimise energy savings.



### Energy benefits are often overlooked

The EDNA review of various countries' IoT and digitalisation strategies found that often energy applications were neglected, as strategies tended to focus more on benefits in human health, personal security, finance, etc.

Examples do however exist where energy benefits are included: Austria's 'Digital Roadmap Austria' and the EU's 'Advancing the Internet of Things in Europe' provide in-depth recommendations for intelligent efficiency and demand flexibility.

### Connecting devices to the internet can waste energy

The total energy used by billions of devices to connect to the internet can be significant. By 2030 it is estimated that 300 TWh per annum could be wasted globally, which is the same as the current electricity consumption of the UK. This energy can be limited by placing requirements on the 'network standby power' used by devices, without affecting device functionality.

