Energy Efficient End-use Equipment
International Energy Agency

ENERGY EFFICIENCY POLICY BRIEF

Policy Considerations for Small Network Equipment

EDNA13

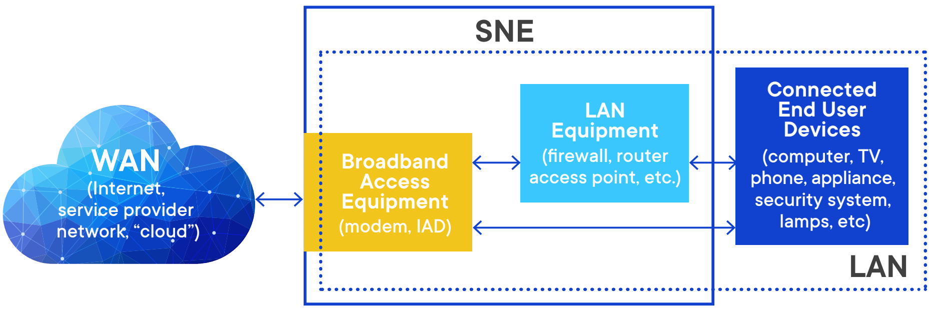
The 4E Electronic Devices and Networks Annex (EDNA) provides policy guidance to members and other governments aimed at improving the energy efficiency of *connected devices* and the *systems* in which they operate. EDNA is focussed on the increased energy consumption that results from devices becoming 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 *Small Network Equipment: Considerations for Energy Efficiency Policy.* Small network equipment (SNE) are used in homes and small businesses to create a data network and/or pass data traffic on a network and include modems, firewalls, routers and network access points.

The EDNA report lays a foundation for future policy efforts to improve the energy efficiency of SNE. It categorises products, examines relationships between functionality and power and discusses various policy considerations and approaches.

Observations for Policy Makers

- SNE devices are required to be energised 24/7 in order to maintain a network and be ready to pass data traffic.
- These devices can draw up to 30 watts each, and their numbers are increasing. Estimated global energy consumption is 120 TWh per annum and growing.
- Strategies exist to reduce SNE energy use by 20% to 50%, however manufacturers lack the incentive to invest the time and resources required to design more efficient products.
- SNE energy consumption is not limited by policies in many countries, with the exception of the EU Ecodesign regulation and industry-led voluntary measures in the EU and North America.
- Due to the complexity and unique characteristics of SNE, more data collection and research may be necessary for policy makers to establish power targets or Minimum Energy Performance Standards.



- However creative policy approaches, such as using energy labelling, or labelling and MEPS in combination, may yield energy savings while reducing the technical burden of developing stringent MEPS. For example, global SNE energy use could be reduced by around 15% if current best practice efficiency levels are adopted.

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**

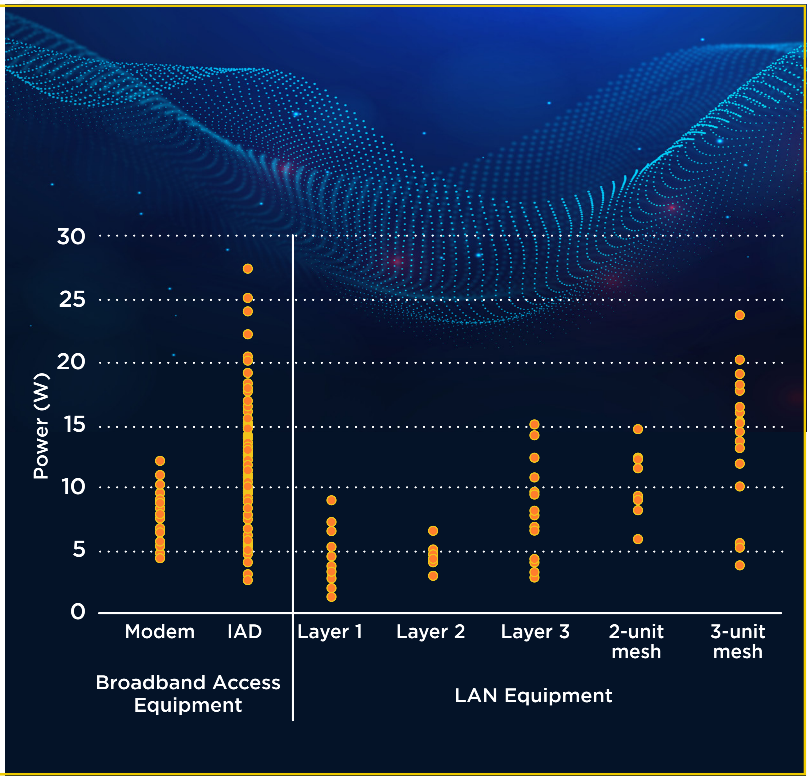
Key Findings

Define SNE types to develop policies

SNE can be categorised as follows:

- Broadband access equipment provide access to the wide area network.
- LAN equipment provides the local area network to end user devices.
- Integrated access devices (IAD) can provide both of these functions.

SNE can be further defined by function: from simple passing of bits (e.g. a range extender) to the provision of WAN connection, security, firewall, etc. Power draw varies based on the number and type of functions provided.



Manufacturer Barriers

Manufacturers face several barriers to improving the efficiency of SNE:

- Cost considerations.
- Poor consumer consideration of energy efficient SNE devices.
- Resistance to change – 'if it works, don't change it'.
- Product reliability (network dropout) and durability (thermal cycling) due to power scaling.

Power Saving Pathways

Options to reduce power in SNE include:

- Powering down unused components, for example unused network interfaces.
- Adjusting the processing speed and/or component duty cycle to suit current data needs.
- Increasing the efficiency of hardware components such as power supplies, chipsets and radio antennas.