Introduction to IEA-4E / EDNA

Hans-Paul Siderius, Netherlands Enterprise Agency
Webinar hosted by the International Energy Agency
*Interoperability - Connecting the Dots in a Fragmented Digital Energy Landscape*

Tuesday 29 November 2022
IEA-4E / EDNA

Annex of IEA-4E TCP

Efficiency of connected devices & systems

Technical analysis & policy guidance

Austria, Australia, Canada, Denmark, European Comm, France, Japan, Korea, Netherlands, New Zealand, Sweden, Switzerland, UK, USA
Energy Implications of Device Connectivity

- Digitalisation
  - Intelligent efficiency
  - Demand flexibility

- Energy Costs
  - Wasted energy
  - Upstream energy
Intelligent Efficiency

- The deployment of network-connected ICT technologies to facilitate efficient operation of energy-using equipment, leading to energy savings

- IE typically operates at the system level, rather than at the device level, to optimise the operation of a system of equipment, leading to energy savings
Demand Flexibility

True demand flexibility provides 3 main services

Load Shedding

Load Shifting

Modulation

Demand flexibility can also provide ancillary services such as frequency regulation and voltage control
EDNA Studies on Demand Flexibility

Interoperability
OCTOBER 2022

Guide to energy management protocols
NOVEMBER 2022

Are We Getting the Best Out of Smart Home Technologies? The Role of Usability
OCTOBER 2021

Standardisation for Smart Devices
OCTOBER 2022

Retrofitting Connectivity for Energy Benefits
FEBRUARY 2021

Harnessing IoT for Energy Benefits
FEBRUARY 2021

EDNA Studies on Demand Flexibility
Policy Briefs
EDNA Studies on the Energy Costs

- 20+ studies on this topic
- ‘Network zero’ devices
- Total energy model

**Edge Devices, Network Standby Power**

The graph below depicts the energy used by connected “edge” devices, in the network standby condition. The average network standby power of devices can be varied up or down, and different product types can also be selected.

The dropdown menu to the right is used to select the network standby power of connected edge devices, as a percentage of their estimated business-as-usual (BAU) network standby power. For example, in the 75% scenario, the edge devices entering the stock (from 2021 onwards) would have a network standby power which is 75% of the projected BAU network standby power. This 75% is applied (not cumulatively) to the projected BAU network standby power for each of the years 2021-2030.
More Information

- Website
  - https://www.iea-4e.org/edna/

- Total energy model
  - https://www.iea-4e.org/edna/tem/

- Studies and policy briefs
  - https://www.iea-4e.org/edna/publications/

- Contact
  - hans-paul.siderius@rvo.nl
  - steve@beletich.com.au