ENERGY EFFICIENCY

BEYOND 1-WATT

Network standby data collection methodology and policy development workshop 7-8 May, Stockholm

Vida Rozite, Energy Efficiency Unit

International Energy Agency

Background

- ✓ 1-Watt standby
- ✓ Reduced standby energy consumption of stand alone products

New challenge: NETWORK CONNECTED PRODUCTS

- Global standby electricity consumption of networked products - 850 TWh by 2020 per year
- Savings potential - 550 TWh by 2020 per year

Project approach and objectives

- Joint IEA/4E project in cooperation with key stakeholders incl. SEAD
- Focus: how to decrease standby power consumption of networked products (edge devices)
- Project objectives:
  - Raise awareness about network standby
  - Bring together stakeholders
  - Provide policy guidance
  - Stimulate data collection efforts and international cooperation
- Project outputs: workshop(s), publication (2013), international conference (2013)

Issues and challenges

- Terminology and definitions
- Large range of products with very different functions and different connectivity requirements
- Range of power modes

**Standby – product not performing primary function but in low power mode(s) waiting for signal*

** Network standby is a topic area not a discrete mode*

- There is knowledge – but it is distributed and not readily accessible to decision-makers
- Partially dealt with through a range of standards and policy efforts
- Some data – incomplete sets, not readily available to decision-makers – lack of baselines, trend analysis
- Lack of methodologies for standardised comparable data collection

Types of products - clusters

- Appliances
- IT and imaging (PC, notebook, multifunction display (MDF) printer, copier, scanner)
- Audio-visual (TV, set-top box, games console, amplifiers)
- Lighting
- Network equipment (router, switch, modem, access point)
- Miscellaneous

Questions:

- Different approaches for different clusters?
- Are these the right clusters? Different parameters?
- Is prioritisation possible/desirable – or do we need more data?

Vision: Network connected & energy efficient

- Functionality
- Quality of service
- Low energy consumption in all power modes
- Quick and automatic drop down to low power modes
- Enabled power management
- Innovation

Technical solutions…

- Reducing power for network links
- Changing power states
- Power scaling
- Service reduction
- Improved user interfaces
- Power management
- Proxying

What do we need to get these solutions implemented?

- International targets?
- Technical requirements?
- Labels?
- Efficient networks?
- Technical standards?
- Performance requirements?
- Standardised protocols?
- Technology roadmap(s)?
- Other drivers?

From vision to action

What do we need to get effective drivers in place?

Data collection methodologies	Data collection	Data sharing	Infrastructure
Testing methodologies	Standardisation work	International agreements	Information Repositories
Awareness raising	Technical working groups		Et cetera…

- What do we need in terms of policy development?
- What do we need for technology development?

And in what order?

Timeframe?

Who should take the lead?

Who needs to be involved?

Workshop agenda

Setting the scene

- 1: Technology and future

What do we want?

- 2: Targets and objectives

What do we need to get there?

- 3: Discussion

What do we already have?

- 4: Experiences, practices and further needs
- 5: Building on lessons learned
- 6: International standards and energy management protocols

Alignment and common solutions

- 7:
  - How to measure standby energy consumption of networked appliances
  - How to develop standardised test procedures and protocols

Quick deployment and sharing

How to ensure international cooperation

Next steps & actions

- 8: Discussion

Targets and solutions

- Discuss targets

Long term target?

Actions?

- Discuss roles of stakeholders

What do we need to start with?

Telecom industry | Int. standardisation org | Consumers/users

Appliance manufacturers | Industry associations | Governments

- Discuss approaches and types of policies and measures

Is there an optimal mix?

Energy standards | Voluntary agreements | Design principles

Technology standards | Technical requirements | Labels

Industry wide protocols | Performance requirements | Communication and awareness raising

Technology strategy

Test procedures and specifications

How do we make energy efficiency a priority?

Is there a clear time-line?
What needs to be done first?

Data for effective solutions

- What do we need to develop effective solutions?

Methodologies	Data collection	Data bases	Analysis

Consistent terms and definitions on: product types, modes, functionalities, technologies etc.

- Data for what?

Baselines	Performance requirements		Comparisons
Projections	Benchmarking	Labels	Track progress
Trends	Agreements	Evaluation	Compliance

- What data?

Power consumption in different modes	Time spent in different modes	Functionality (network benefits, resume time)
Stock (quantity, age, lifetime)	Shipment, products sold (quantity, lifetime)	Market saturation
Minimum technical power requirements	Best in class performance	Worst in class performance?

Measurement and data collection

- How to collect data?

Building surveys

Device inventory

Use pattern surveys

Device level metering

Intrusive surveys

Market surveys

Non intrusive/automatic metering (remote)

Collecting and processing commercial data sources

Laboratory testing

Sample testing

Bottom up estimates (lab data + shipment + stock)

- What approach suits what purpose and at what stage?
- What existing approaches can we build upon?
- What methodologies need to be further developed?
- What are the first steps required?

Workshop outcomes

- Identification on what we have and what we need
- What parallel issues/developments need to be considered
- Where are the energy efficiency opportunities?
- Identification of priorities
- Next steps
- Timeline
- Issues for future attention

Practical issues

- Presentations (on website), release form
- Coffee breaks
- Lunch
- Internet
- Time management
- Making interventions
- Notes and workshop report
- vida.rozite@iea.org , ph. +33 (0)6 79 72 77 61