International Partnership for Energy Efficiency Cooperation

International Collaboration to promote promoting Energy Efficiency in networked devices

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Capetown, DUE, March 31st, 2015

G20 ENERGY EFFICIENCY ACTION PLAN

VOLUNTARY COLLABORATION ON ENERGY EFFICIENCY

16 NOVEMBER 2014

G20 ENERGY EFFICIENCY ACTION PLAN:
Networked Devices

Capetown | 31 March 2015

Energy Efficient End-use Equipment
International Energy Agency

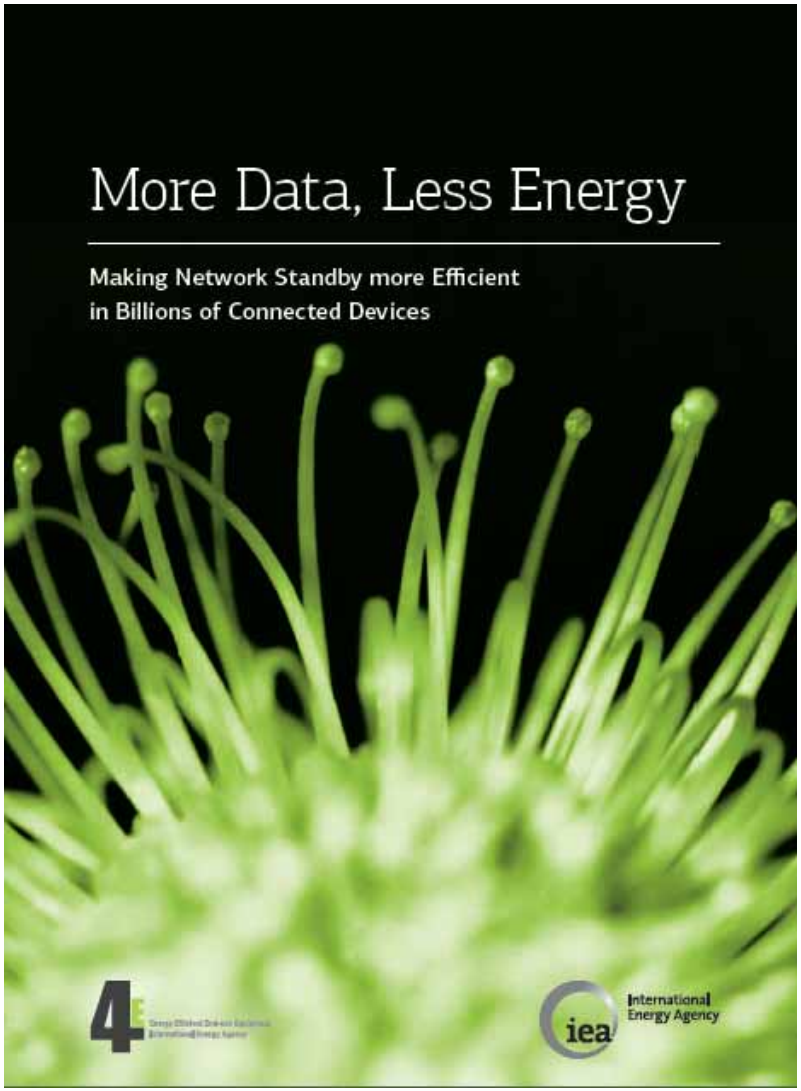
International Energy Agency

SEAD Super-Efficient Equipment and Appliance Deployment

International Partnership for Energy Efficiency Cooperation

A brief recent history

- **More Data, Less Energy Published, July 2014**



A brief recent history

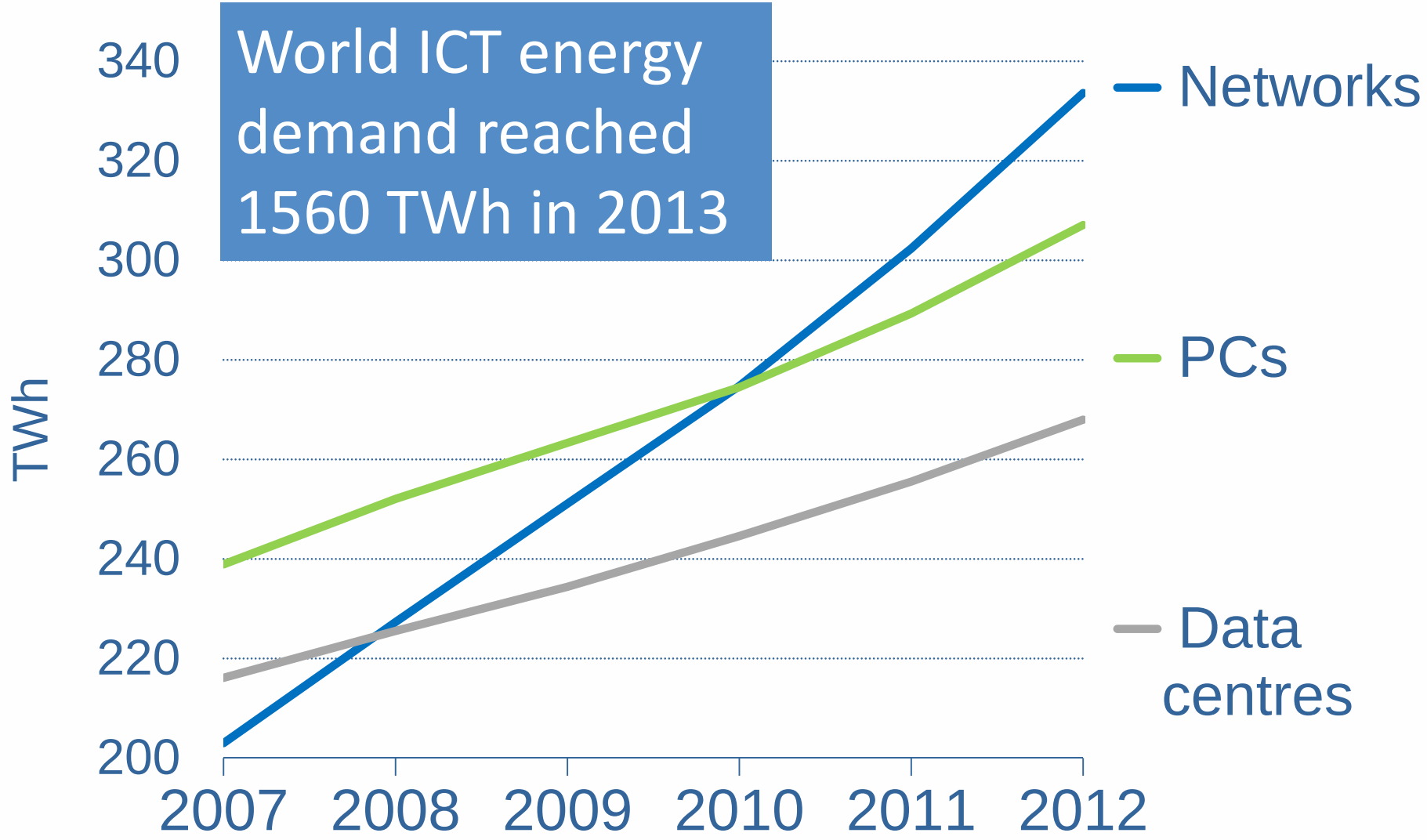
- **Adopted as part of the G20 Energy Efficiency Action Plan in November 2014**
  - **IEA leading the work stream with the UK Department of Energy & Climate Change**
  - **Supported by IEA-4E Implementing Agreement and SEAD**
  - **Reporting through IPEEC**
- **Taken forward under the Turkish presidency from the start of 2015**

Why we care about networked devices?

- Managing energy demand is key to secure sustainable energy systems
- Information communication technology (ICT) electricity demand is growing at a faster rate than overall electricity demand
- Devices (including appliances) in homes and offices are driving this demand
- These provide valuable services, but there are significant energy efficiency opportunities
- Policies can play an important role in creating the conditions needed to accelerate energy efficiency

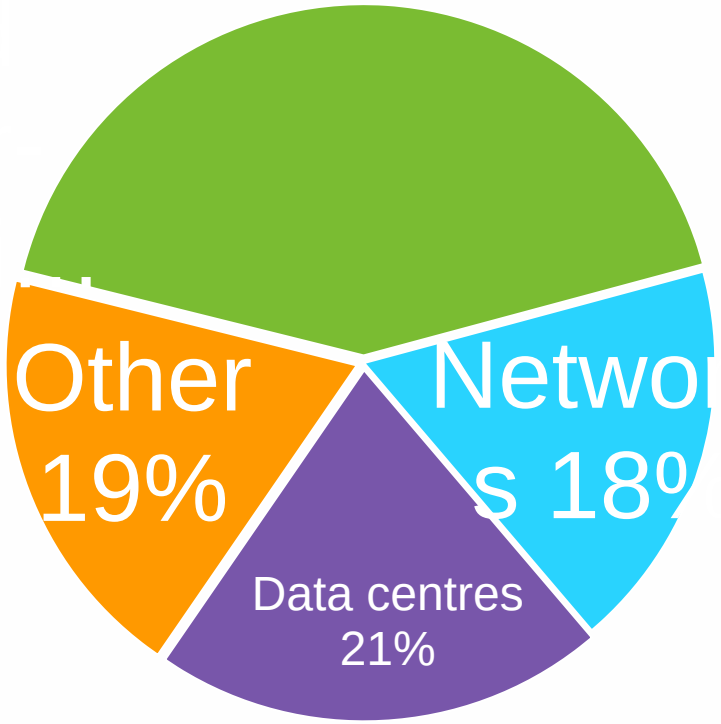
Growing electricity demand of ICT

- **Electricity demand of networks, PCs and data centres**

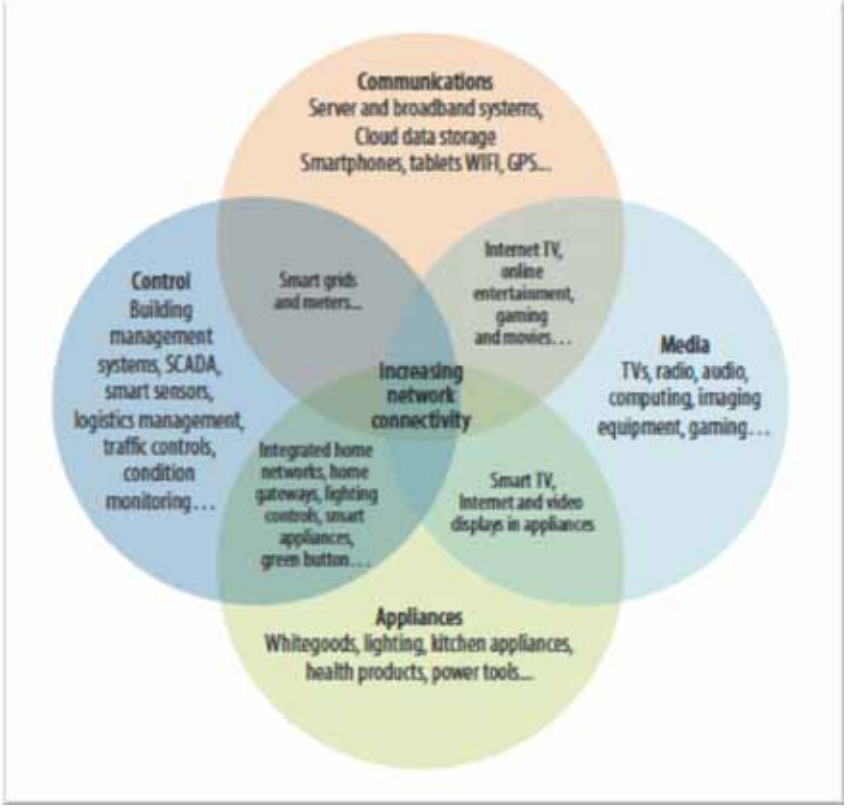


Networked devices are driving electricity demand

- **ICT electricity demand by segment**



The new age of information and communication technology

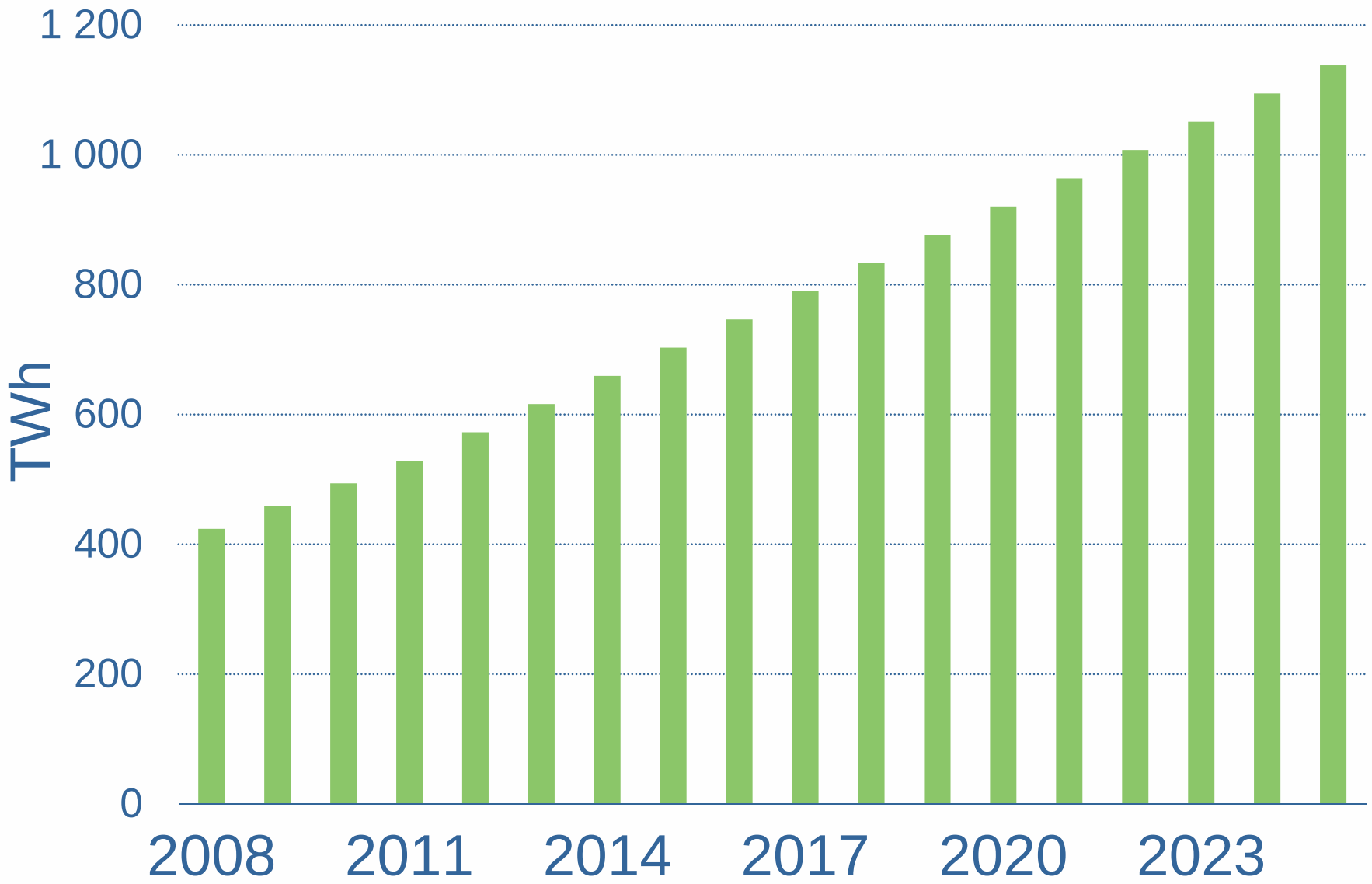


Standby power consumption of networked devices is >600 TWh p.a.
= More than Canada's total annual electricity consumption for 2011.

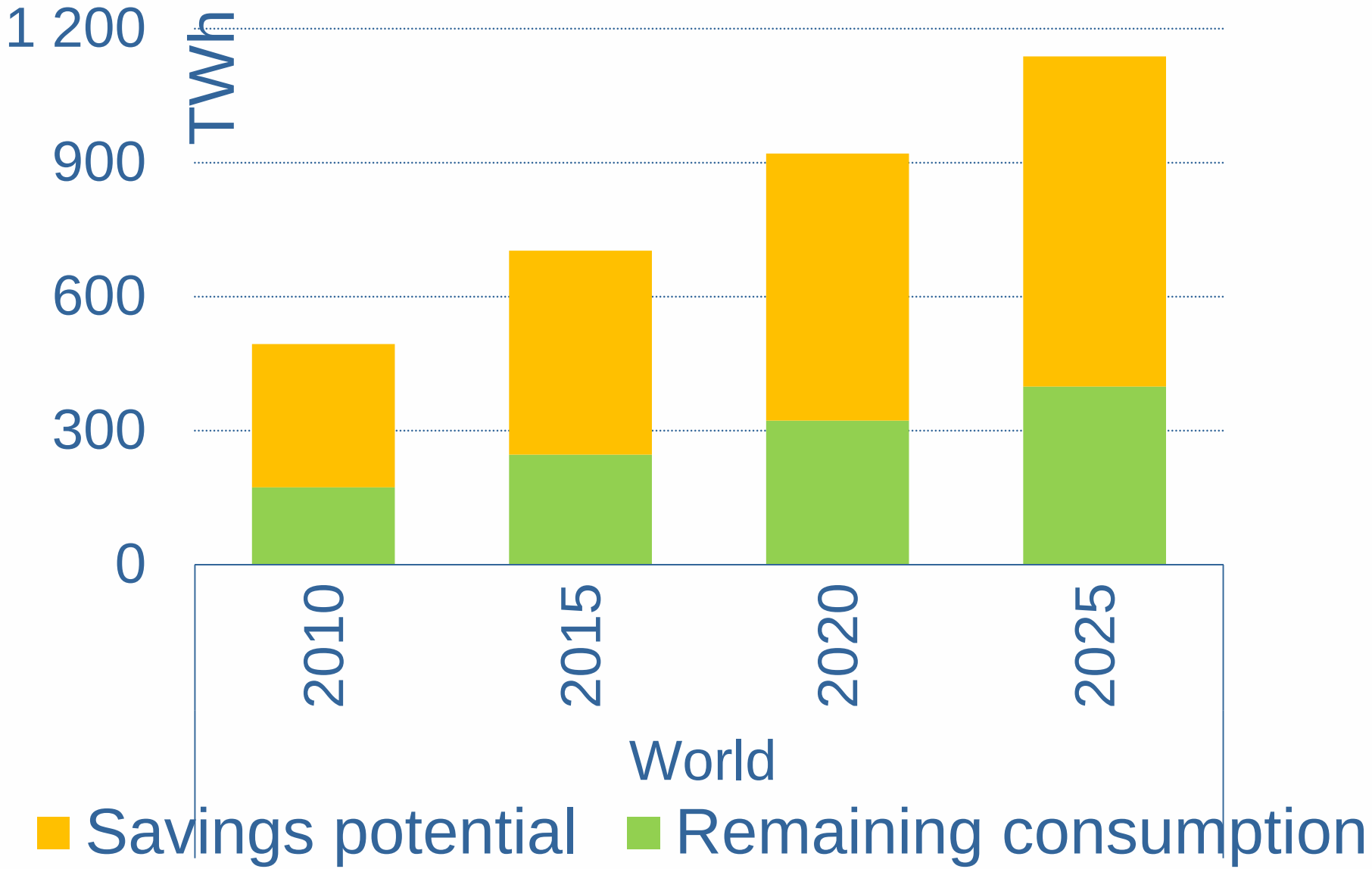
By 2025, global standby power consumption is projected to nearly double.

The global energy footprint information and communication technology, 2013

Networked devices are driving electricity demand



How much could we save?



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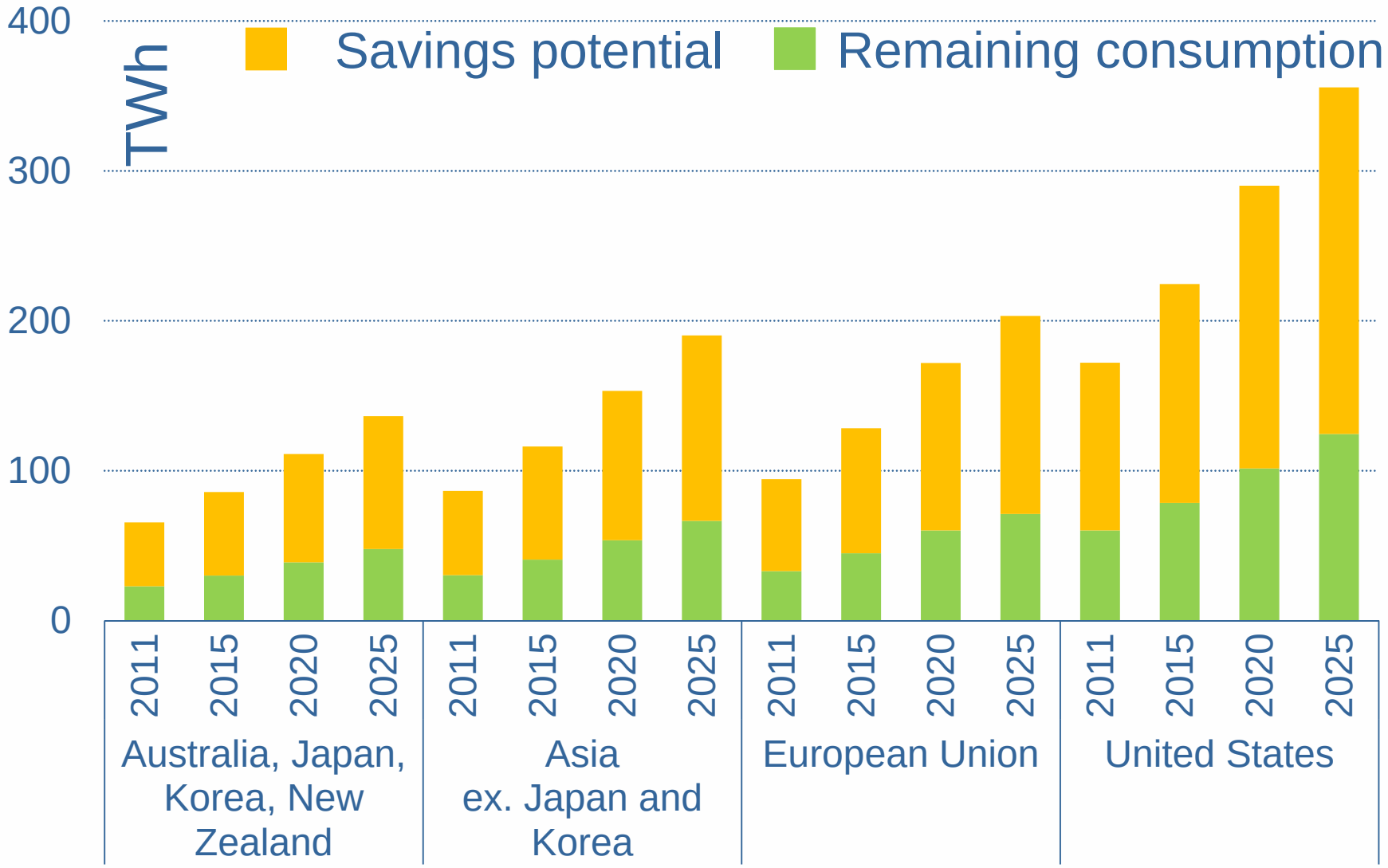

Work stream deliverables

- **Establish a forum** for governments and industries representative of the value chain for connected devices to develop joint initiatives.
- **Expand relevant research** and **share information** amongst participants.
- **Accelerate the development of product standards** for technologies that would enable devices to power down and use less energy when in standby mode.
- **Develop policy frameworks** to reduce energy consumption of networked devices when in standby mode.
- **Consider goals** for reducing the global standby mode energy consumption of networked devices.
- **Report on progress** with these issues and make recommendations to the G20 Summit in Turkey.

Progress so far

- Government / Industry workshop at IEA in January
- Six themes proposed for further developments
  - Goal/vision
  - Awards
  - Protocols
  - IEA Principles for Energy Efficiency in Digital Devices
  - Centre of Excellence
  - Digital Energy Disclosure
- Industry invited to propose further themes by end Mar
- Web presence established to host outputs and provide information on the work stream
  - http://www.iea-4e.org/projects/g20.
- Network of 300 government agency & industry contacts established

Timeline for 2015

- Joint Government/Industry workshop, January 19/20, IEA, Paris
  - Progress report to ESWG – February
- Government workshop, May 21, Copenhagen
  - Progress report ESWG – May
- Joint Government/Industry workshop, June 17/18, IEA, Paris
  - Progress report to ESWG – September
- Report to leaders, November

G20 Energy Efficiency Action Plan

"Participating countries will work together to accelerate the development of new ways to improve the energy efficiency of networked devices"

"In 2015, this work will include consideration of options for goals for reducing the global standby mode energy consumption of networked devices"

Key Tasks

1. Co-ordinate governments, experts & industry to encourage innovative responses to energy consumed by network devices
2. Expand relevant research & share information
3. Accelerate standards for enabling devices to use less energy in network standby mode

Key Tasks (2)

4. Develop policy frameworks to reduce energy consumption in network standby mode
5. Consider goals for reducing global standby mode energy of network devices
6. Report on progress with these issues to the next G20 Summit in Turkey (via IPEEC)

Roles and Responsibilities

- Coordination:
  - UK (Dept of Energy & Climate Change)
  - International Energy Agency
- Resources being harnessed:
  - Energy Efficient End-Use Equipment Implementing Agreement (IEA-4E)
  - IEA-4E Electronic Devices and Networks Annex (EDNA)
  - Super Efficient Equipment and Appliance Deployment initiative (SEAD)

Working Groups

Joint industry/government groups to develop new initiatives on:

1. Vision

   Identify ambitious goal to focus government and industry attention on the issue of networked devices.

2. Principles for Energy Efficiency in Digital Devices

   Develop and promote a set of 'guiding principles' for the design of equipment and networks.

3. Protocols

   Identify gaps in the existing landscape of protocols with potential to enhance energy efficiency.

Working Groups

4. Digital Energy Disclosure

   Investigate how networked devices can communicate information on their own energy use.

5. Centre of Excellence

   Establish an open access repository for best practice in energy efficiency in network devices.

6. Awards

   Explore the use of awards to incentivise industry and standards making bodies.

7. Intelligent Efficiency

   Examine and quantify the benefits of intelligent efficiency.

Workshops

19/20 January 2015	Joint Government/Industry workshop	IEA, Paris
21 May 2015	Government workshop	Copenhagen
17/18 June 2015	Joint Government/Industry workshop	IEA, Paris

Further information

http://www.iea-4e.org/projects/g20

Participants

Industry
ADM
Alcatel-Lucent International
ARM Holdings
European Committee of Domestic Equipment Manufacturers (CECED)
Cisco
Consumer Electronics Association (US)
DELL
Digital Europe
Ericsson
Hitachi
Hewlett Packard
Information Technology Industry Council
Intel
Japan Electrical Manufacturers' Association
LG
Osram
PACE
Philips
Power Integrations
Rockwell Automation
Samsung
Schneider Electric
Sony Computer Entertainment
ST Microelectronics
Telecom Italia
Telecommunications Technology Association
Zigbee

Government
Australia
Canada
Denmark
European Commission
France
Germany
Korea
Netherlands
Saudi Arabia
Sweden
United Kingdom
USA

Intergovernmental
IPEEC
IEA
Super-efficient Appliance Deployment Initiative (SEAD)
UNEP