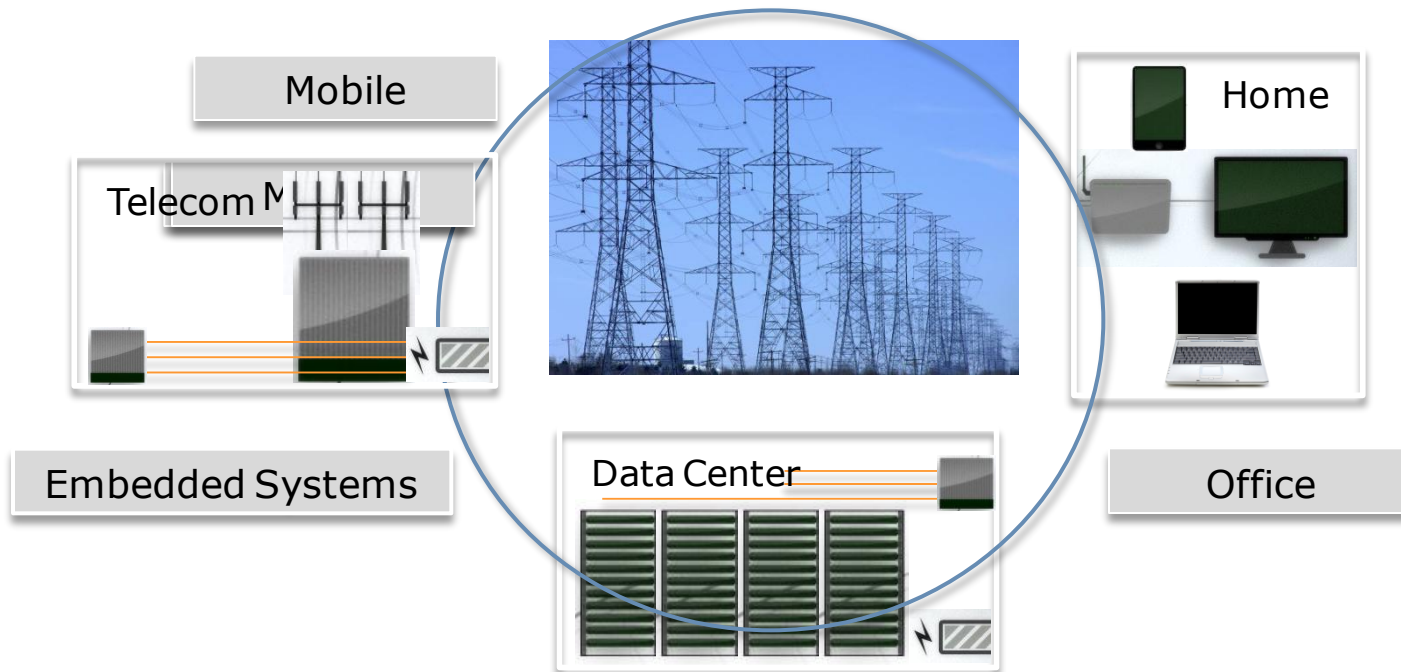


Energy-efficient ICT for SMEs, the Administration and the Home

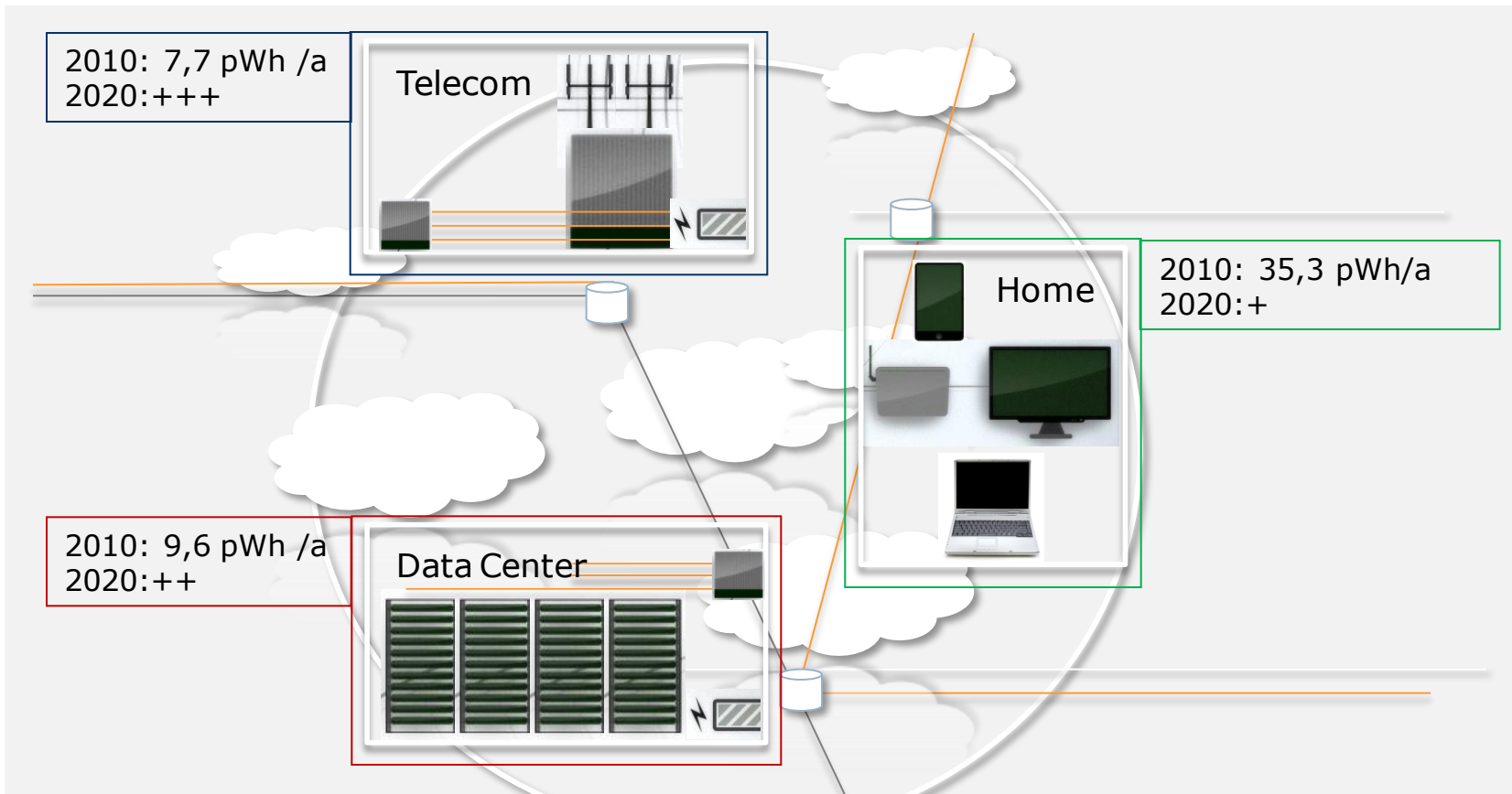
Programme Overview

Initial Situation: Demand for Energy and Resources

- More use of ICT in Germany leads to persistent increase of power consumption
- 2001 (38 pWh), 2007 (55 pWh), forecast 2020 (67 pWh)



ICT-Energy Consumption in Germany 2010 and 2020



Source: Survey of Fraunhofer Institute: "Estimating the energy requirements of information society's ongoing development" (2009); Fichter: Energy Consumption und Energy Costs of Servers and data centres in Germany (2008)

IT2Green: Targets

- Optimising power consumption in telecommunication-networks, data centres and cloud applications
- Energy-efficient ICT infrastructures and services
- Solutions for SMEs, administration and home environment

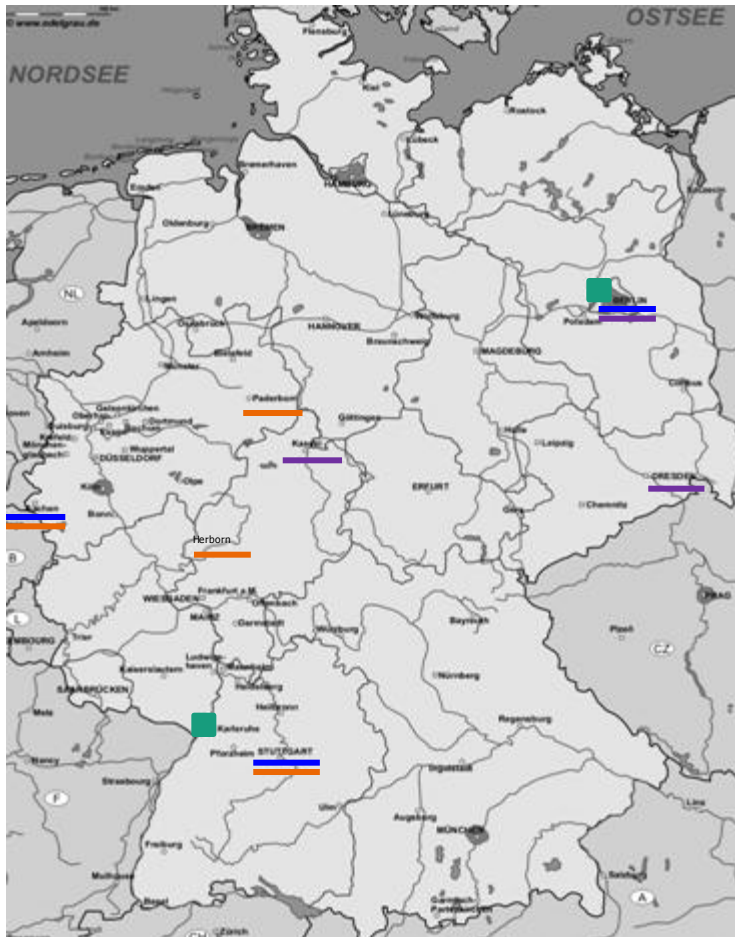
IT2Green: Programme

2011 – 2014

- Funding of : **Ten pilot projects** in Germany & accompanying research
- Budget: Funds of **30 million Euros**
Investment of altogether 60 million euros by industry, research and politics
- Contact: Federal Ministry of Economics and Technology,
Division VI B 3, Development of Convergent ICT
Phone: +49 30-18 615-6330
Project Management by DLR
acting on behalf of the Ministry
(Dr. Christian Schmidt, Phone +49 2203-601-2801)



IT2Green Clusters



Cluster Data centres and Clouds

- AC4DC (coordinator: Rittal, Herborn)
- GGC-Lab (regio iT, Aachen)
- GreenPAD (unilab, Paderborn)
- MIGRATE! (University Hohenheim, Stuttgart)

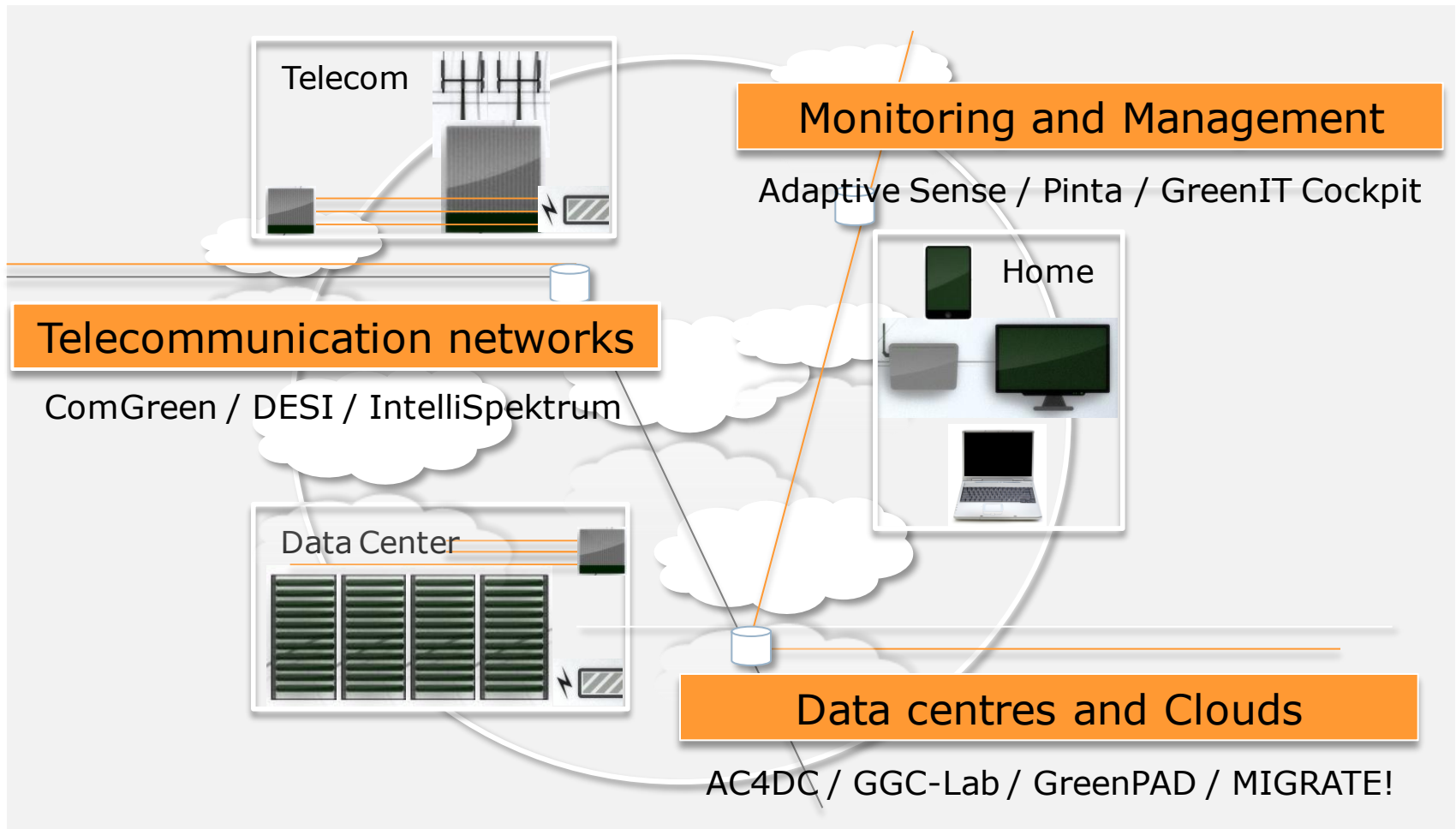
Cluster Telecommunication networks

- ComGreen (coordinator: Ericsson, Aachen)
- DESI (Deutsche Telekom, Berlin)
- IntelliSpektrum (Alcatel-Lucent, Stuttgart)

Cluster Monitoring & Management

- Adaptive Sense (coordinator: T-Systems, Dresden)
- GreenIT Cockpit (TimeKontor, Berlin)
- Pinta (deENet, Kassel)

IT2Green Clusters



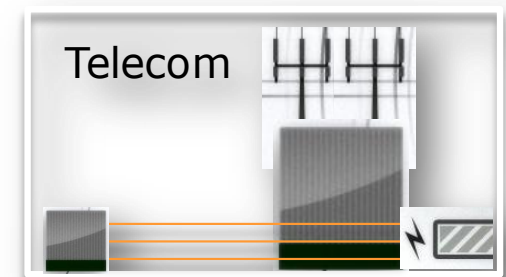
Cluster: Telecommunication networks

Fields of research

- Energy-efficient technologies for access networks (landline/mobile communications)
- Management of network-infrastructure depending on level of usage

Projects

- ComGreen (coordinator: Ericsson, Aachen)
- DESI (German Telekom, Berlin)
- IntelliSpektrum (Alcatel-Lucent, Stuttgart)



Cluster Telecommunication networks – ComGreen

ComGreen - Communicate Green

- Aim:** Optimising energy-efficiency of radio-networks and aggregation networks via adaption of capacities
- Implementation:** Development of a system of self-organised adaption of parameters of the net
- Partners:**
- Ericsson GmbH
 - University of Paderborn
 - Fraunhofer Institute for Telecommunications Heinrich Hertz Institute
 - Technische Universität Berlin
 - Deutsche Telekom AG

www.communicate-green.de

Cluster Telecommunication networks – DESI

DESI - reduce the energy demand of the entire ICT production

Aim: Energy-efficient ICT-production in a *Smart Power Grid*

Implementation: Managing the telecommunication-networks according to workload & intermediate storage of energy

Partners:

- Deutsche Telekom AG (coordinator)
- Alcatel-Lucent Deutschland AG
- PASM Power and Air Condition Solution Management GmbH & Co. KG Munich
- Joulex GmbH
- Zuse-Institute Berlin (ZIB)

www.desi-it2green.de

Cluster Telecommunication networks – IntelliSpektrum

Intelligent Spectrum - Management for energy-efficient access to small-celled hierarchical net structures

Aim: Energy-efficiency and solutions for business, arranging telecommunication networks for a high number of devices and alternating levels of usage

Implementation: Using small-celled hierarchical net structures

Partners:

- Alcatel-Lucent Deutschland AG (coordinator)
- Intel Mobile Communications GmbH
- Fraunhofer Institute for Telecommunications Heinrich Hertz Institute
- Fraunhofer Institute for Applied Solid State Physics IAF

www.intellispektrum.de

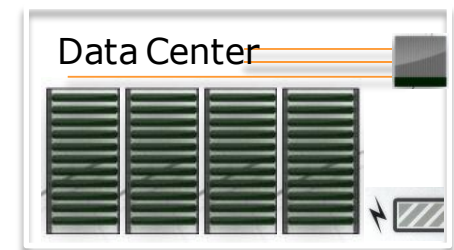
Cluster: Data centres and Clouds

Fields of research

- Dimensions and management of efficient clouds
- Energy-optimised ICT-services for regional suppliers, e.g. airports

Projects

- AC4DC (coordinator: Rittal, Herborn)
- GGC-Lab (regio iT Aachen)
- GreenPAD (Unilab, Paderborn)
- MIGRATE! (University Hohenheim, Stuttgart)



Cluster Data centres and Clouds – AC4DC

AC4DC – Adaptive Computing for Green Data Centers

- Aim:** Allround optimisation of ICT-Systems
- Implementation:** Optimizing the energy demand and costs of the entire ICT system including users & devices like computers, data centres, data nets and energy providers
- Partners:**
- Rittal GmbH & Co. KG (coordinator)
 - Borderstep Institute for Innovation and Sustainability gGmbH
 - OFFIS Institute for Information Technology
 - BTC IT Services GmbH
 - Universität Paderborn
 - Würz Energy GmbH & Ko. KG
 - KDO

Cluster Data centres and Clouds – GGC-Lab

GGC-Lab - Government Green Cloud Laboratory

- Aim:** Energy-efficiency for regional and local government authority, e.g. via cloud-computing
- Implementation:** Extendable cloud-infrastructure for public administration german-wide via four data centres
- Partners:**
- regio iT aachen (coordinator)
 - ekom21 KGRZ
 - Brandenburgischer IT-Dienstleister ZIT-BB
 - StoneOne AG
 - Technische Universität Berlin

www.ggc-lab.de

Cluster Data centres and Clouds – GreenPAD

GreenPAD – energy-optimised ICT for regional economic- and science cluster

Aim: development, testing and transfer of energy-optimised ICT-infrastructure models for regional economy and science clusters

Implementation: exemplary testing at a new data centre at the university and technology park of Paderborn

Partners:

- unilab AG (coordinator)
- Universität Paderborn
- Fujitsu Technology Solutions GmbH
- E.On Westfalen Weser

www.green-pad.de

Cluster Data centres and Clouds – MIGRATE!

MIGRATE! - pilot projects, procedures and tools for migration into cloud-based energy-optimised infrastructures for user and management

Aim: reduction of energy demand of ICT, e.g. in hospitals, housing associations, regional administrations and airports

Implementation: usage of cloud-computing-technologies

Partners:

- University of Hohenheim (coordinator)
- Drees & Sommer Advanced Building Technologies
- Brandenburgischer IT-Dienstleister
- IBM Deutschland
- University of Stuttgart
- Robert Bosch Gesellschaft für medizinische Forschung mbH
- Stuttgart airport

www.migrate-it2green.de

Cluster: Monitoring and Management

Fields of research

- development of efficiency-indicators
- monitoring and active load-management for in-house networks

Projects

- Adaptive Sense (T-Systems, Dresden) (coordinator)
- GreenIT Cockpit (TimeKontor, Berlin)
- pinta (deENet, Kassel)



Cluster Monitoring and Management – Adaptive Sense

Adaptive Sense - Adaptive sensor technology for energy-efficient control of separate systems

Aim: Optimisation of energy demand of ICT
(surroundings, devices, hardware and network)

Implementation: Recognition of status of users and applications

Partners:

- T-Systems Multimedia Solutions GmbH (coordinator)
- DREWAG - Stadtwerke Dresden GmbH
- TU Dresden
- Zentrum Mikroelektronik Dresden AG

www.adaptive-sense.de



Cluster Monitoring and Management – GreenIT Cockpit

GreenIT Cockpit – Organisation-wide, process-oriented management cockpit for the energy efficiency of ICT

- Aim:** Developing and studying of an organization-wide and business process-oriented management cockpit for the energy efficiency of ICT – a GreenIT Cockpit
- Implementation:** Collection and processing of relevant data from various systems (data centres, networks and peripheral devices such as thin clients resp. desktops, printers, scanners)
- Partners:**
- TimeKontor AG (coordinator)
 - Axel Springer AG
 - Technische Universität Berlin
 - Federal Environment Agency

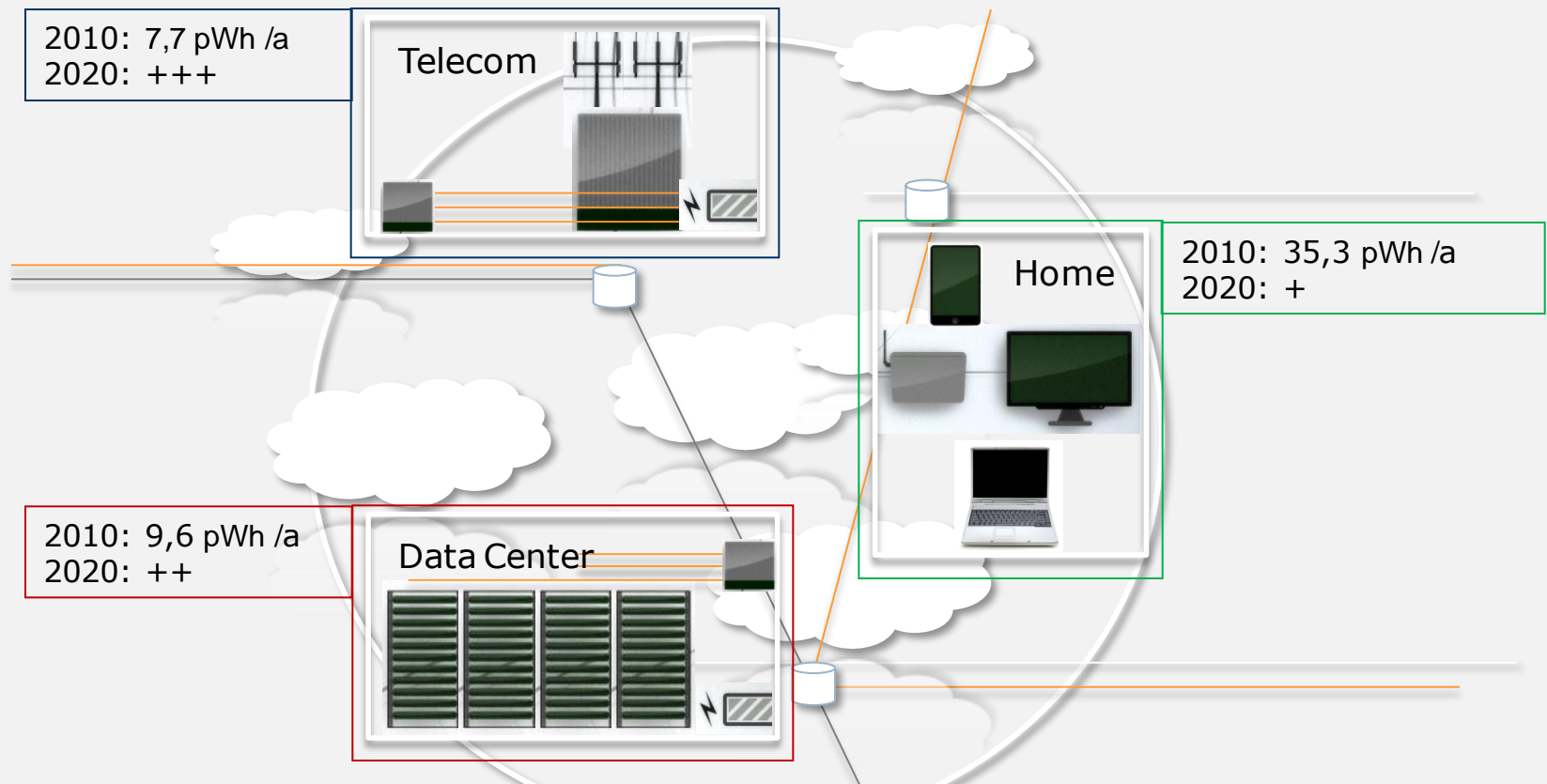
Cluster Monitoring and Management – Pinta

Pinta – Pervasive energy via internet-based telecommunication services

- Aim:** Processing of ICT as well as heating and cooling systems in premises for higher energy-efficiency, reduction of costs and increasing utility value
- Implementation:** Development of a context-sensitive system for energy management
- Partners:**
- Kompetenznetzwerk Dezentrale Energietechnologien e. V. (coordinator)
 - University of Kassel
 - Fraunhofer Institute for Wind Energy and System Technology
 - Siemens AG
 - E.ON Mitte AG

<http://pinta-it2green.de>

Saving energy and resources



Source: Survey of Fraunhofer Institute: "Estimating the energy requirements of information society's ongoing development" (2009); Fichter: Energy Consumption und Energie Costs of Servers and data centres in Germany (2008)

Scientific research

Scientific support

- Monitoring and evaluation of projects
- Overlapping topics and sections
- Trend-analysis and recommendations
- Transfer of knowledge and PR

Public relations

- Annual status meetings
- Fairs and congresses (e.g. CeBIT)
- Website, newsletter, press
- Video-production



Scientific research

Tasks

- Evaluation of progress of project and results
- Identification of overlapping topics and moderation of sections
- Development of best pilot projects
- National and international trend-analysis
- Results and knowledge transfer



Working groups for cross-cutting topics

Aim: Information, networking for and support of the projects

Topics

- Measuring energy-efficiency
- New telecommunication networks and technologies
- Techno-economic business factors

Bi-annual meetings



More information: www.it2green.de

The screenshot shows the IT2Green website homepage. At the top, there is a navigation bar with links for Home, Deutsch, Contact, Imprint, and Privacy. The main header features the IT2Green logo and the tagline "Energy-efficient Information and Communication Technology". A search bar is located below the header. The left sidebar contains a navigation menu with links to Home, Programme, and Projects, along with the logo of the Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR) and information about their role as project carriers for IT2Green. The main content area features a large graphic of a green '@' symbol with a leaf, set against a background of binary code. Below this graphic, there is a section titled "Energy-efficient ICT for SMEs, the Administration and the Home" with a sub-heading "A funding programme by the German Federal Ministry of Economics and Technology". The text describes the programme's goal of reducing energy consumption in data centres, telecommunication nets, office and home applications, and includes a "Read more..." link. On the right side, there is a "News" section with four entries, each with a date and a link icon. The bottom right section is titled "Contact" and provides information about the German Aerospace Center (DLR) Project Management Agency, including the address, website, and contact details for Dr. Christian Schmidt.

Home Deutsch Contact Imprint Privacy

IT2Green.de Energy-efficient Information and Communication Technology

Suchbegriff eingeben FINDEN →

→ IT2Green - Home
→ Programme
→ Projects

Deutsches Zentrum für Luft- und Raumfahrt e.V. Projektträger im DLR

Der Projektträger im DLR betreut die fachliche und organisatorische Umsetzung von IT2Green im Auftrag des BMWi

Energy-efficient ICT for SMEs, the Administration and the Home
A funding programme by the German Federal Ministry of Economics and Technology

With the programme "Energy-efficient ICT for SMEs, the Administration and the Home", the German Federal Ministry of Economics and Technology promotes innovative projects which aim at reducing the energy consumption in data centres, telecommunication nets, office and home applications. [Read more...](#)

News

- Germany global number 3 in low-carbon ICT leadership benchmark** (2011-11-1) [→]
- Federal Ministry of Economics and Technology supports German IT start-ups: Programme "German Silicon Valley Accelerator"** (2011-9-23) [→]
- Federal cabinet adopts 6th Energy Research Programme** (2011-8-3) [→]
- AC4DC related project by Offis wins German Prize for Computer Centres**

Press Release (in German only): [→] [New technology focus IT2Green](#)

Contact

German Aerospace Center (DLR)
Project Management Agency
Convergent ICT / Multimedia on behalf of the BMWi
Linder Höhe
51147 Cologne, Germany

<http://www.pt-multimedia.de/en/index.php> [→]

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