Greening of and greening by IT

Introduction

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Agenda

- Power and pollution, the bad and the ugly
- European ambitions & reality
- Dutch ambitions & reality
- Consortium Green IT Amsterdam region
- Greening of IT and greening by IT
Three hard truths

1. Global fossil energy demand is growing, the supply is not.

2. Burning fossil fuels is bad for the environment.

3. Energy and ICT are closely interlinked.

EU ambitions on energy

“Europa is in the lead of the new industrial revolution. We will see changing markets and new business models.”

But strategy and implementation is up to the different countries.
Energy in Europe, two parallel trends

**Europeanization:**
- Larger energy companies.
- Large power plants on large distance from energy consumer.
- More exchange of energy across national borders.

**Localisation:**
- Large number of small power plants (distributed generation, microgrids), renewables, new companies, often small and local.
- New forms of cooperation, participation of end users.

The economy, stupid! Disruptive shale gas and oil

**The uneven energy renaissance**

Europe’s energy policy delivers the secret of all possible worlds. A colleague in a Brussels green group commented last week that the European Union was pushing our own people, whereas the US was pushing its people. The US is known for its pro-coal stance and its pro-nuclear stance, whereas the EU is known for its pro-renewables stance. This is where the US is lagging behind.

The US is a country with a high population density, which means it has a high demand for energy. However, the US is also a country that relies heavily on coal and natural gas for its energy needs. This is where the US is lagging behind.

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Your iPhone is powered by coals

2013: economy still inherited the economic momentum of 19th century England; world’s 20 largest companies:

¾ of them are either producing fossil fuels, trading them or converting them into transport or energy.
Ambities 2020-2030

Bijdrage aan duurzame energievoorziening en werkgelegenheid:
(voor toelichting zie volgende slides)

In 2030
• 372 PJ per jaar besparing primaire energie;
• 21 Mton per jaar minder CO₂;
• 9.000-27.000 FTE in smart grids.

In 2020
• 192 PJ per jaar besparing primaire energie;
• 11 Mton per jaar minder CO₂;
• 4.500-9.000 FTE in smart grids.
The change will come

Consortium Green IT Amsterdam region

- Public-private network organisation (founded June 2010).
- Contribute to reducing 40% CO2 in 2025 in Amsterdam

**Ambitions realized by:**

- **Greening of IT**
  - Realising energy savings within the ICT sector

- **Greening by IT**
  - Innovative use of ICT for the reduction of CO2 emissions in other sectors

- **Green IT Economy**
  - Creating new business opportunities with Green IT
Greening of IT

The NYT DC

Self-sufficient
Incl. renewable energy

Participation

Smart grid

Area's of interest for green data centers

- Hot and cold alleys
- Operations and logistics
- Sustainable energy
- Cooling
- Servers
- Lighting
- Property
- UPS
- Information
- Energy management
- People
- Labels
Green Deal data centers

- Agreement between the Dutch Government, the City of Amsterdam and Green IT Amsterdam Region
- Creation of a data center improvement package
- Coordinate with:
  - Nederland ICT
  - NL Agency (AgentschapNL): working group Datacenter Cooling
  - City of Amsterdam: EPP and PUE regulations

Activities:
- Clustering of best practices (including feasibility aspects, planning, costs, etc)
- Offering quick scans
- Foundation for improving de-facto standard of data center energy efficiency in the Netherlands

Greenhouses and data centers

ENERGY

Data centers are large users of electricity and produce heat as a waste product. Greenhouses are large users of heat and produce electricity as a by-product.

“data centers should becoming part of the heating and energy infrastructure, since what we do from a simple perspective is turn electricity into heat!”
De trendbreuk:

“De trendbreuk in denken voor een duurzame energievoorziening zit in de omkering van het warmte- of koude leveringsproces aan tuinders: de voor verwarming benodigde energie niet genereren door hoogwaardige warmte te degraderen, maar door laagwaardige warmte op te waarderen met elektrische waterpompen, in combinatie met korte- en lange-termijn opslag.”
Greening by IT; European Interest

- **Green Metropole**: Develop green business opportunities in the Amsterdam region.
- **GreenITNet**: Share and transfer good practices on green IT policy for cities.
- **IREEN**: Creating an European R&D roadmap for the development of ICT to support energy efficiency in neighbourhoods.
- **PEDSA: Pan European Data Center Academy**: Setting up a European institute for R&D, education, training and skills development.
- **Geyser**: Research and pilots on embedding datacenters in a smart grid and smart city environment.
Energieakkoord is nog lang geen deltaplan

Overheid moet financieel en fiscaal mee in plaats van tegenwerken om een groene transitie te bevorderen

Sjef van Lithoorn

Onlangs waren wegeten van vergroening en vergroenereren van ICT een roos in een room. Maar omdat het nog even volop staat te gaan om een technologische afzet en niet om een welstandsgewijze versterking van de groene transitie, kan het niet alleen om technische afzet gaan. De overheid moet financieel mee in plaats van tegenwerken om een groene transitie te bevorderen.

Het lijkt alsof na het wachten wil uitkomen en daarbij wel wat gaat aan de dagelijkse praktijk, maar voorlopig geen vooruitgang. De overheid moet financieel mee in plaats van tegenwerken om een groene transitie te bevorderen.

Green and ICT... an area of tension

- Research
- Projects
- Communication & Information
- Education
- Networking & events
- Representation

Groening of IT

Groening by IT
Thank you

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