

# User-group energy-footprint of e-services

Invitation, costs and study design

15.05.2013

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# Agenda



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**14:00**    **Welcome & Who is Who**

**Joost Visser**

**14:15**    **Introduction Energy Footprint**

**Michiel Cuijpers**

**14:30**    **Experiences from Logius**

**Joris Gresnigt**

**15:00**    **Project kick-off & Manual**

**Kay Grosskop**

**17:00**    **End**

# Why are we here ? Solve part of the Energy loss chain



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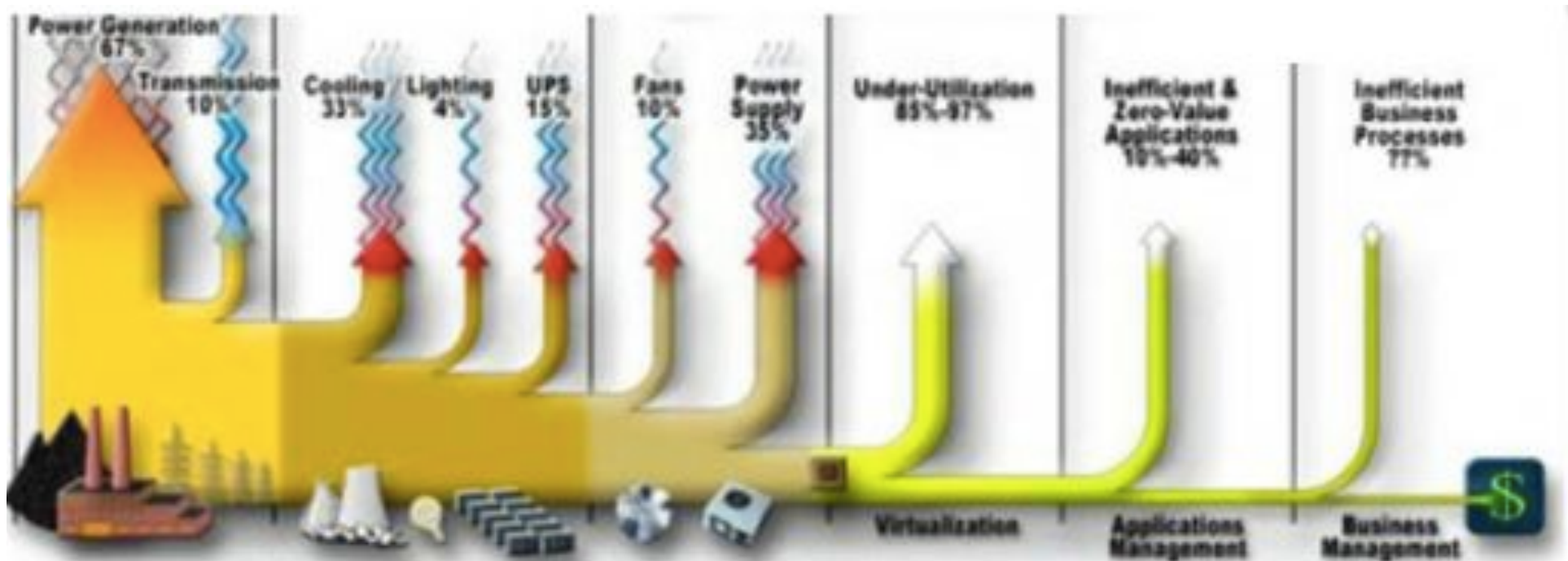
“Grid”

“Datacenters”

“Hardware”

“Applications”

“Usage”<sup>3 | 29</sup>



Energy plant  
100 Watt

Useful Energy  
<1 Watt

# Where is the leak?

## How can KPIs for energy-efficiency reduce TCO?



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### Green IT activities

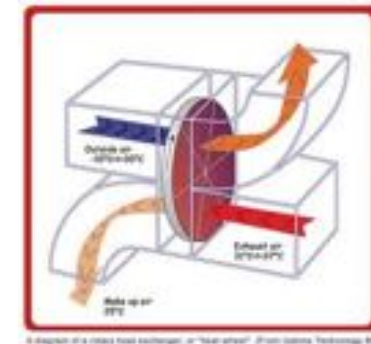
- Improves efficiency of hardware
  - Energy Star, Innovations in chips
- Improves efficiency of datacenters,
  - Code of Conduct, MJA, Kyoto Free Cooling
- Improves efficiency of grid
  - Smartgrid



### BUT Overall energy consumption of ICT keeps growing

### Hardware consumes energy because software tells it to

- Focus on software
- **Switch thinking**
  - from: reducing loss in the power supply chain
  - to: reducing demand for computing resources



# Software development *1964 – resource aware*



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On the  
same  
Location /  
Floor

# Software development *Now – resource agnostic*



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On Different  
Locations /  
Floors

Wirth's Law

*a.k.a. the great Moore's Law compensator*



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**“Software is getting slower more rapidly than hardware becomes faster.”**

**Niklaus Wirth, “A Plea for Lean Software”, Computer 28, 1995**

Hardware became more powerful, but does your word processor run faster?

Do you need results of a search query while you are still typing it?

**Performing the right work?**

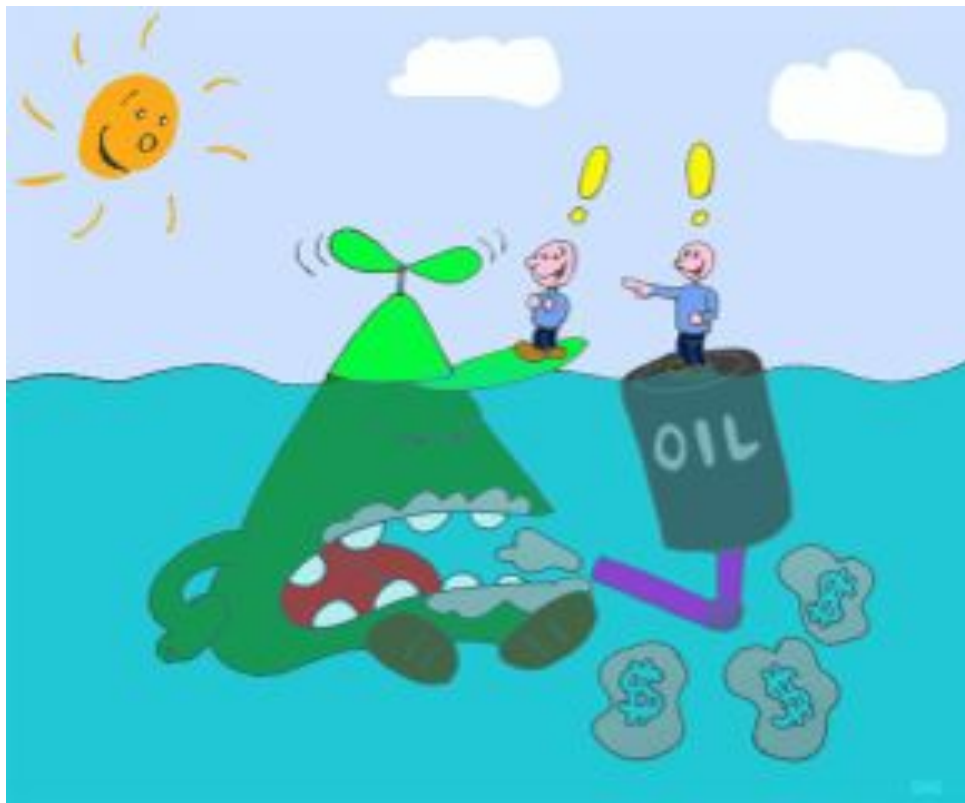
**Performing the work right?**

# New indicators are needed Software Energy footprint



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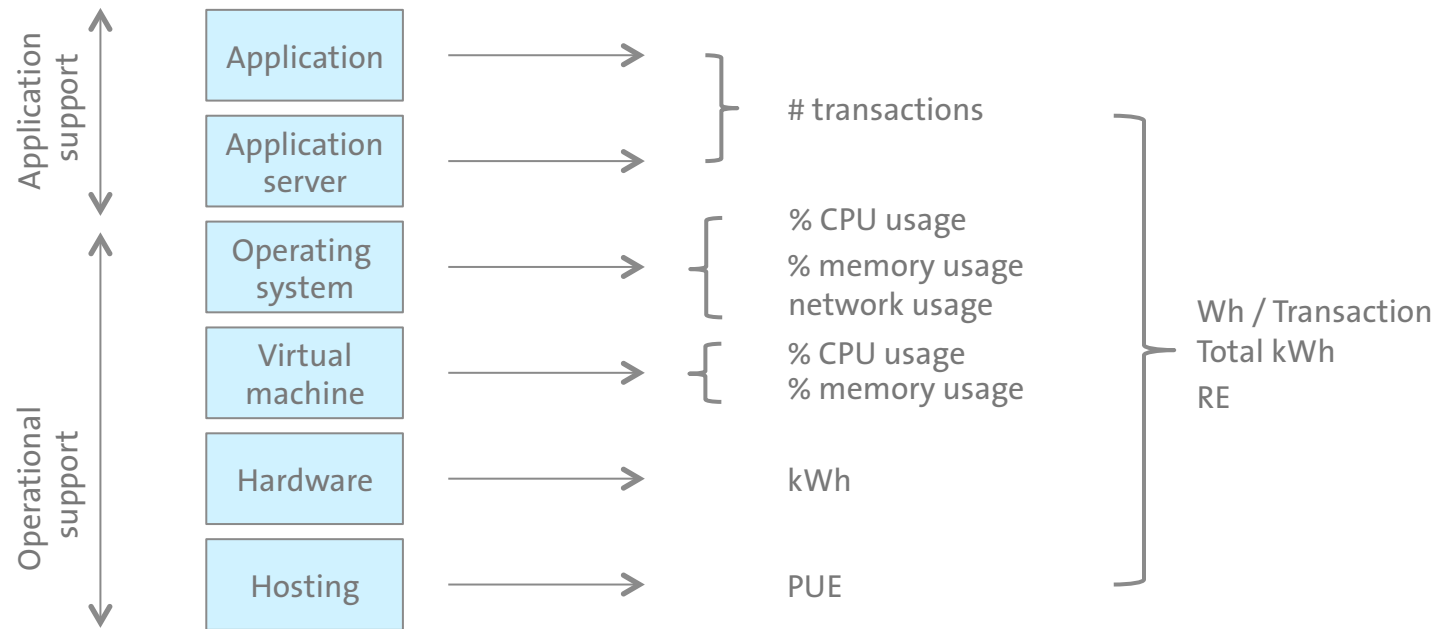
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**Energy consumption is  
the measurable  
consequence of the  
size of an application.**

# 'Connecting the Floors'

## Measurements needed for the model





Logius  
Ministerie van Binnenlandse Zaken en  
Koninkrijksrelaties

# Logius & energiefuotprint applicaties

Joris Gresnigt  
projectleider MVO  
Logius



# Logius?



*Eenvoudig, snel, **groen** en betrouwbaar zaken regelen tussen overheden, burgers en bedrijven. ...Logius vervult hierin een centrale en leidende rol met oog voor de samenhang in de **infrastructuur van de e-overheid.***



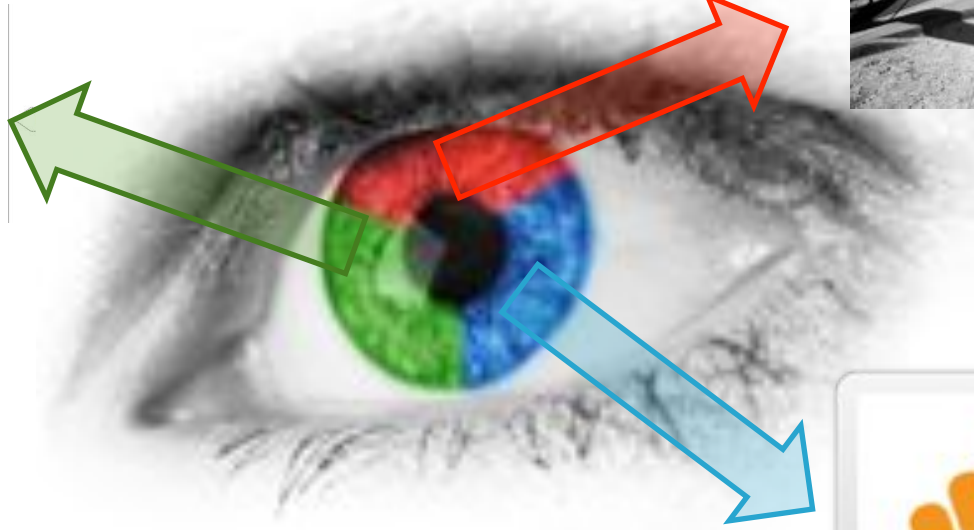
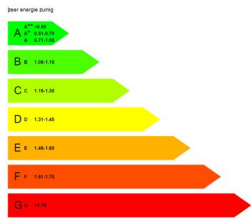
# Logius?



- Onderdeel ministerie Binnenlandse Zaken
- REGIE: IT beheren bij leveranciers



# Maatschappelijk verantwoord ondernemen & Logius





## Waarom MVO bij Logius?





## En nu in de praktijk....pilot energiefootprint





Waarom energiefuotprint? Klantonderzoek naar MVO

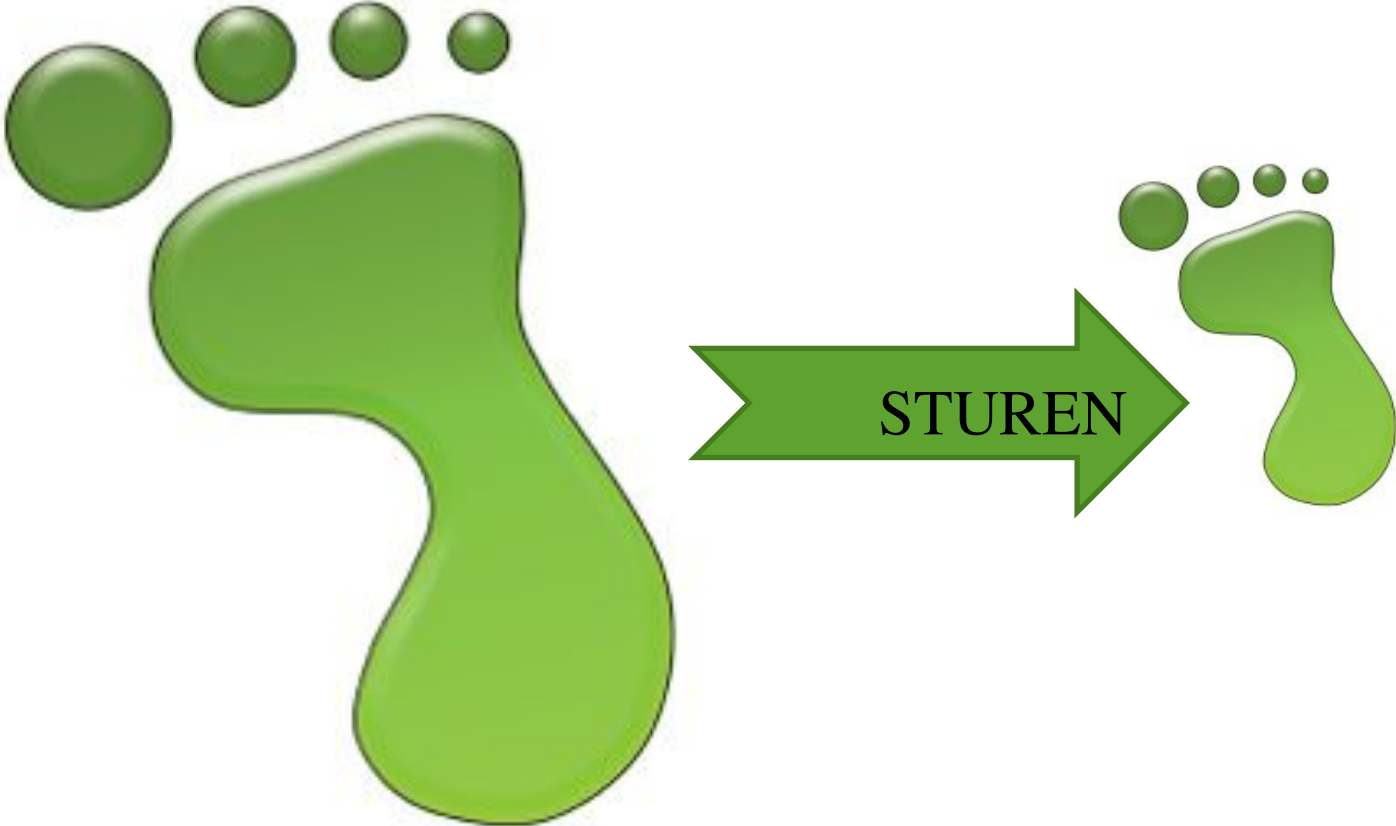
**81%** geen inzicht energieverbruik applicaties.

Van deze 81% wil **75%** inzicht

**80%** wil Logius producten en diensten **energiezuiniger** maakt.



# Wat energiefuotprint?





## Pilot energiefuotprint: hoe?



Agentschap NL  
Ministerie van Economische Zaken

- Digipoort OTP
- DigiDMachtigen



Logius  
Ministerie van Binnenlandse Zaken en  
Koninkrijksrelaties



## Pilot energiefuotprint: resultaten



1. Inzicht
  - » Wh per transactie
  - » Totaalverbruik
  - » Elasticiteit
2. Quick wins
3. Architectuurprincipes



## Pilot energiefuotprint: gevolgen

Applicatie	AE	ET	RE
Digipoort	153.509 kWh	1,27 Wh	34%
DigiD Machtigen	12.800 kWh	38 Wh	11%



1 Kwh minder bespaart 24 euro



**WAAROM  
MOEILIK DOEN  
ALS  
HET SAMEN KAN**

*Loesje*

POSTBUS 1945

4800 SA HILVERSUM


030 660 0000



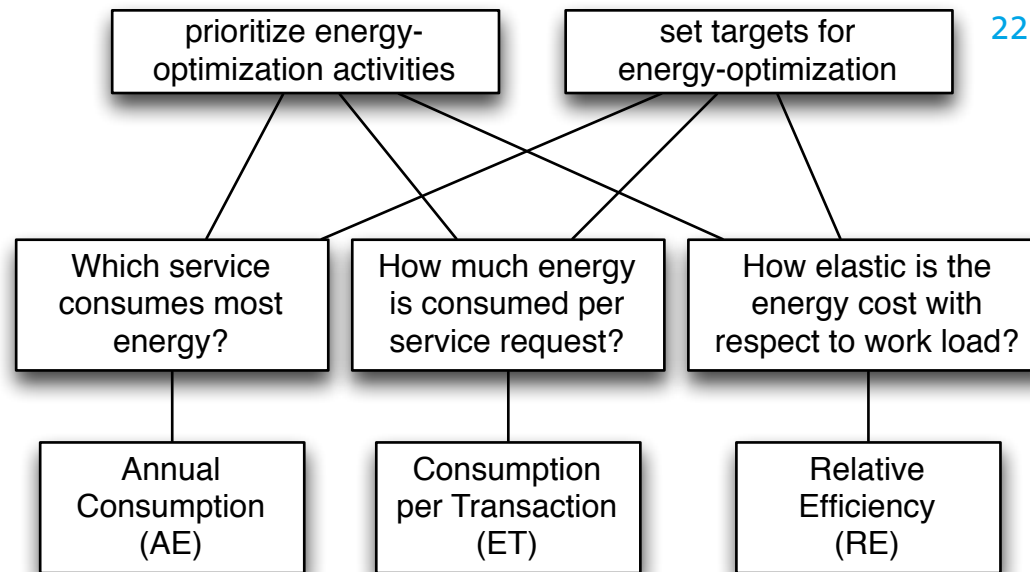
**DOET U MEE?**

# KPI for energy-efficiency of e-services 'first 2 footprints'

Maintenance  
Support  
Licenses  
Servers  
Facilities  
Energy



**1 kWh = 24 €**  
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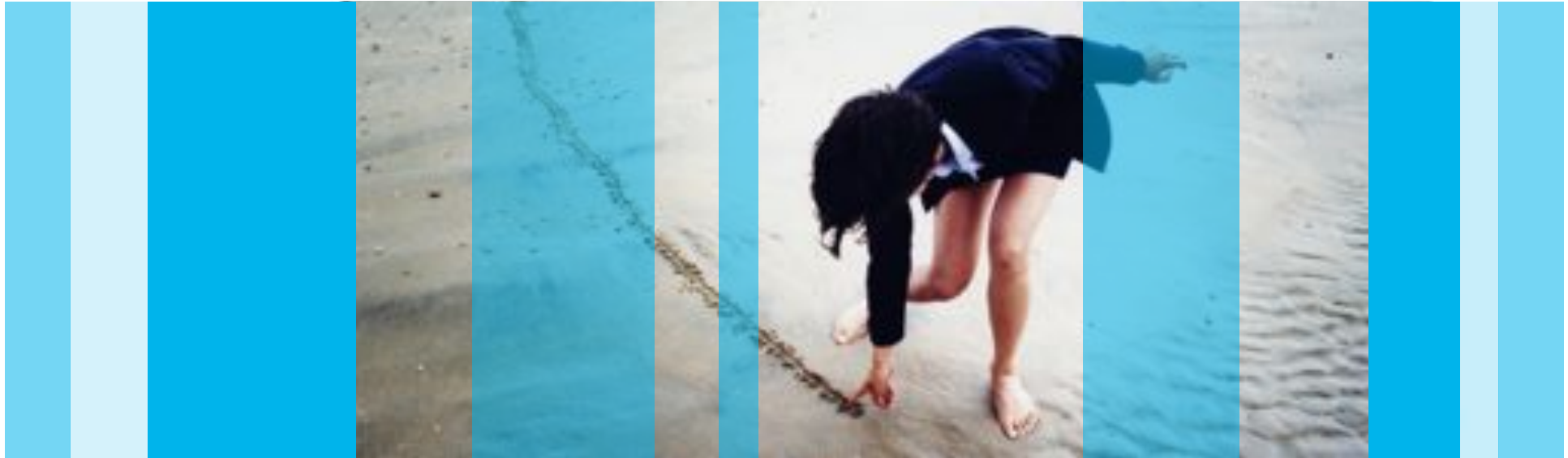


<b>Digipoort</b>	<b>153,509 kWh</b>	<b>1.27 Wh</b>	<b>34%</b>
<b>DigiD Machtigen</b>	<b>12,800 kWh</b>	<b>38 Wh</b>	<b>11%</b>
...	...	...	...

<http://kngs.wikidot.com/kngs:greens2013>



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# Project - Bepaling Energie Footprint

Joost Visser, Michiel Cuijpers, Kay Grosskop

*Public OR Sensitive OR Confidential*

<datum>

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# Doel van de Energy Footprint bepaling



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## Voor Deelnemers

- Inzicht in de footprint van de eigen applicatie
  - Mogelijkheden tot optimalisatie?
- Expertise voor het kunnen bepalen van de footprint
- Positief news /marketing

## Voor SIG / AgentschapNL

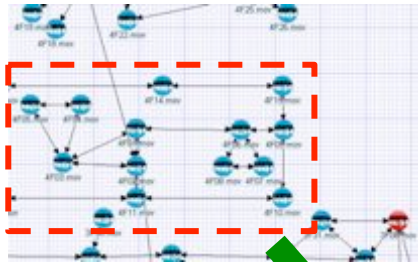
- Verder ontwikkelen van de footprint meting en het benodigde materiaal
  - Tot standaard instrument voor de MJA
- Vergaren extra datapunten voor het Energieregister

# Een footprint bepaling

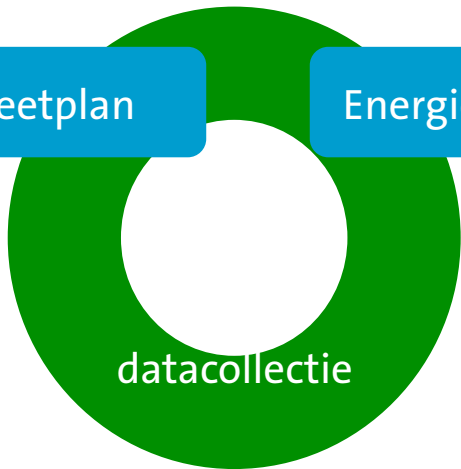


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## Deployment-view & scope



Functionele kennis & Key-Transacties



## Energieregister

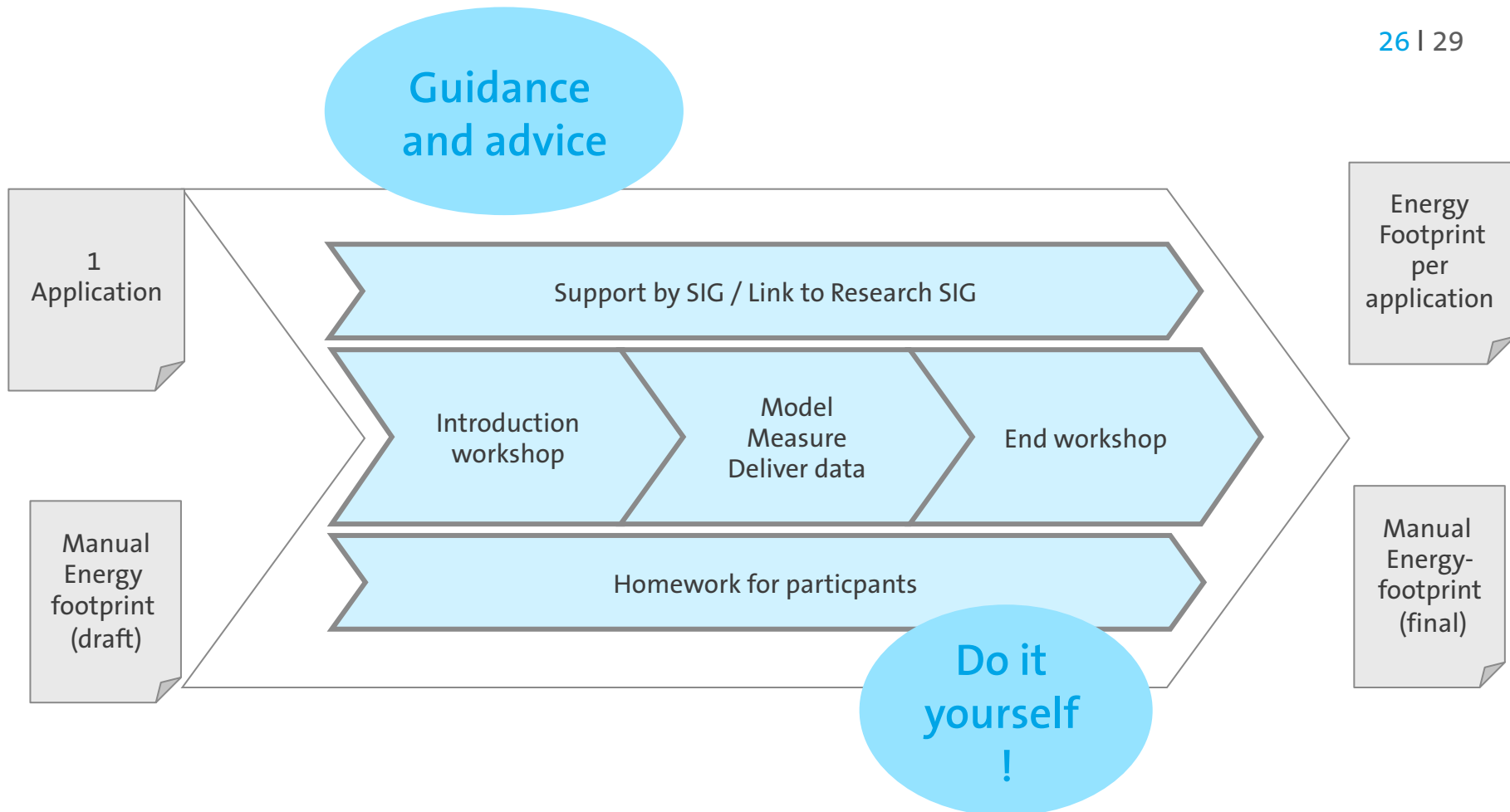
# Design of user group

## 'The participants collect data based on a manual'



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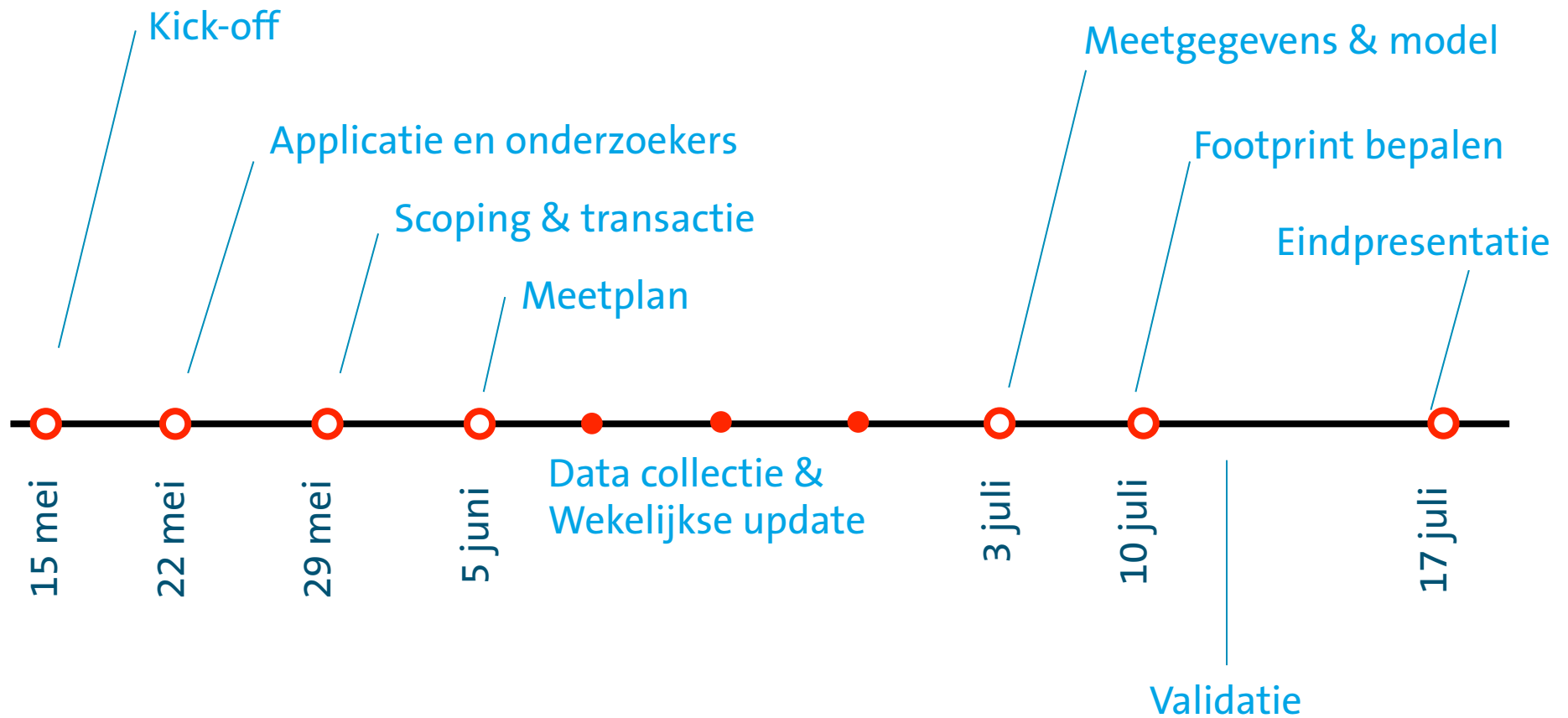


# Doorloopschema en resultaten



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# Kosteninformatie opnemen?



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## Verschillende aspecten

- Operationele Beheerkosten
- Hosting kosten
- Hardwarekosten
- Energiekosten

## Hoe verstorend is het om deze te verzamelen?

# Contact



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**Software Improvement Group**  
**Knowledge network Green Software**

**#KNGS**

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