

**08-04**

# **IMPACT VAN DE NIEUWE ENERGIEWET OP DIGITALISERING**



**SPREKER:**

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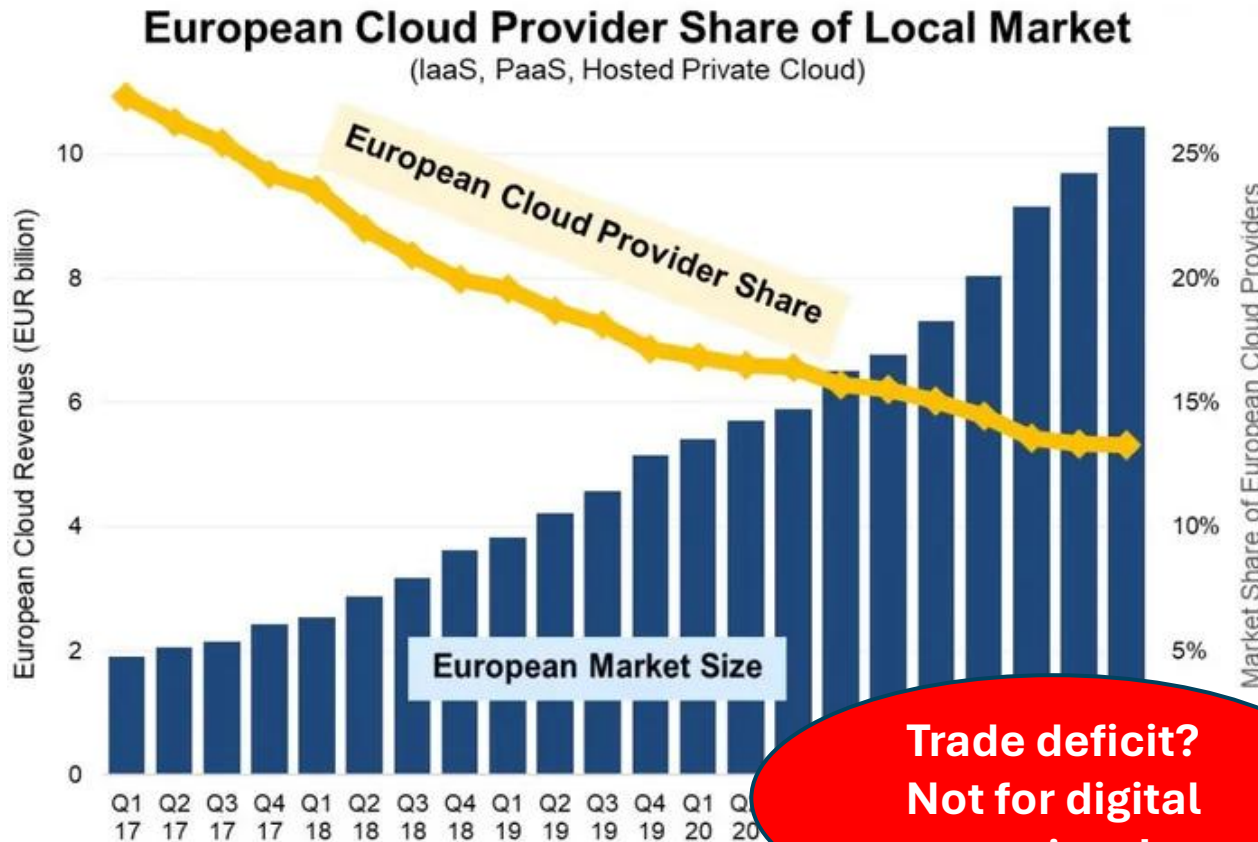
**ECOFED de betrouwbare Europese Cloud voor het energienet  
van morgen**

# European Cloud services in an Open FEDerated ecosystem

*Coming to an open cloud ecosystem based on federation*

**ECOFEED**

# A data driven society is dependent on cloud



EU concerns on Data Sovereignty and non-European cloud dependencies.

→ Legislation and Funding.

Industry concerns for a healthy European industry and market fairness.

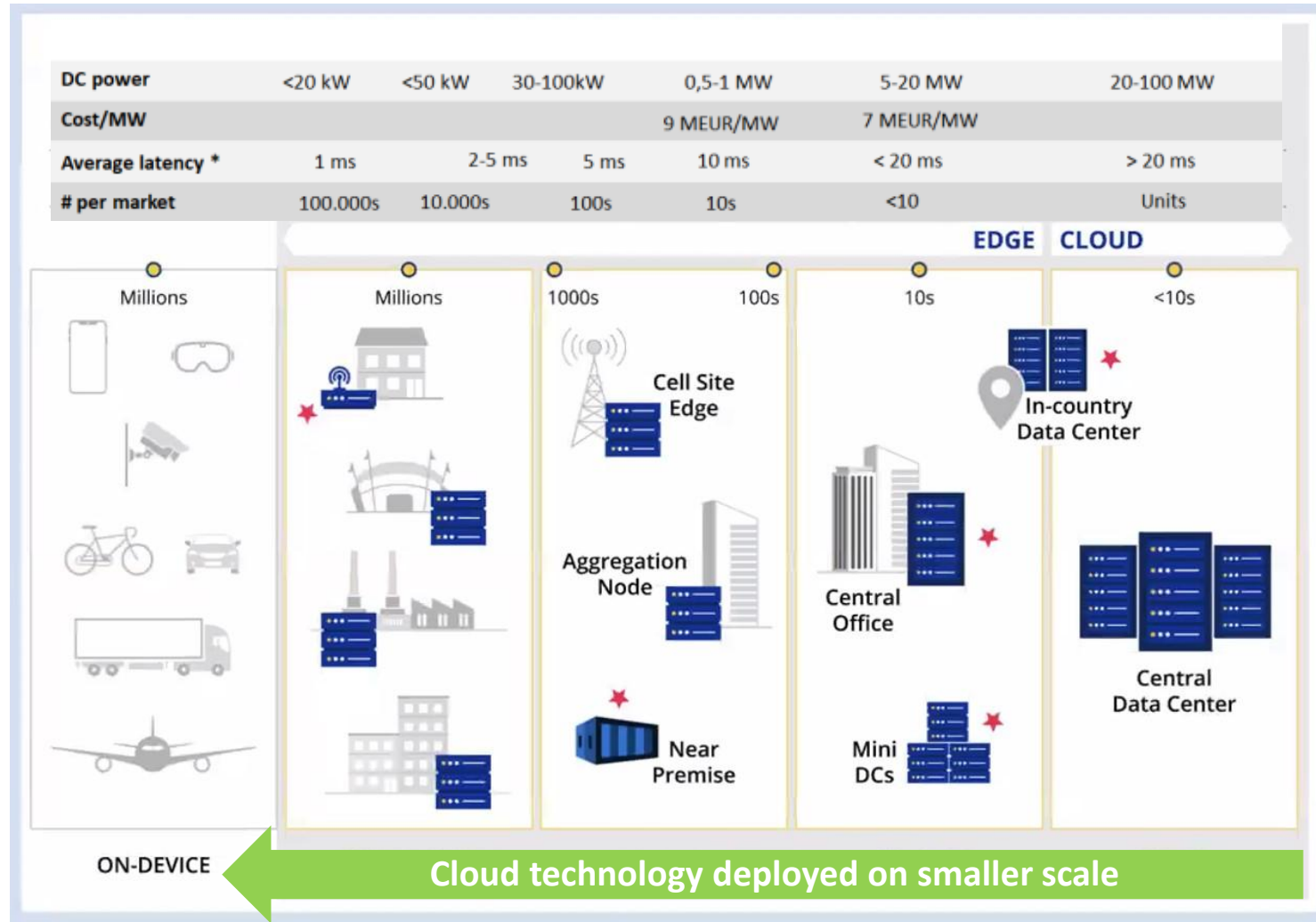
→ Markets and Competition.

User concerns for lack of transparency and lock-in effects.

→ Transparency and Trust.

**Trade deficit?  
Not for digital  
services!**

# Cloud as defined by *EU Alliance for Industrial Data, Edge and Cloud*



- Expected shift of Cloud/Edge-ratio  
80% / 20% → 20% / 80%
- Ambition of 10.000 Green Edge nodes
- Digital Infrastructure will be more distributed in nature
- Heterogeneous in used technological stacks

# What does EU and NL do?

## IPCEI Next Generation Cloud Infrastructure and Services

Europe on the path to the cloud infrastructure of the future



- IPCEI = Important Project of Common European Interest
- CIS = Cloud Infrastructures and Services
- 100 organizations from 12 member states contribute with projects in this integrated project.
- Government funding of > 1,2 billion euro. Private funding comes in addition to this for a total of 2,6 billion euro.
- The Netherlands is funding 70 million euro in three projects:

- **MISD: Modular Integrated Sustainable Datacenter.**



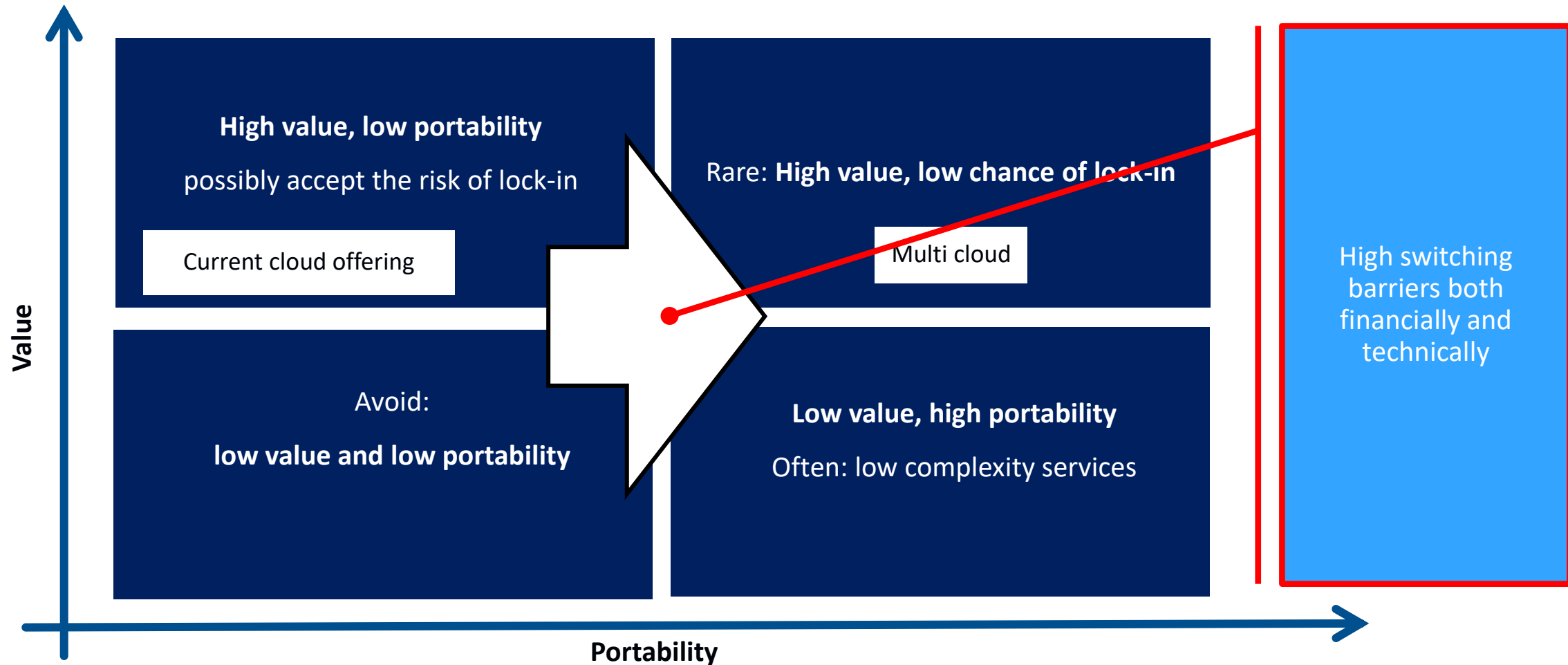
- **ECOFED: European Cloud services in an Open FEDerated ecosystem.**



- **European Cloud Campus: Development of European Cloud Infrastructure and Services.**

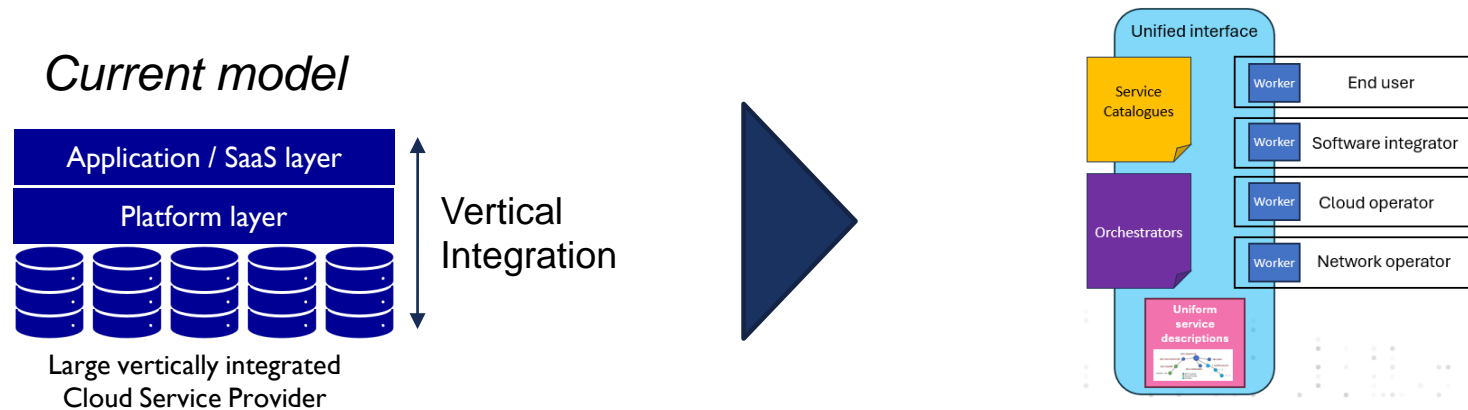


# What needs to be solved for an open cloud ecosystem?



# What will the ECOFED project do?

- Develop a technical basis for a more open cloud usage model, facilitating interoperability, federation and switching between providers.
- Vertical decomposition: disentangling cloud infrastructure and applications



- Enable cloud service providers to build more flexible, scalable and federated cloud
- Lower risk of lock-in effects due to easier cloud switching and more flexible capacity scaling

# From Mono-cloud to Cloud Federation

Keep: freedom of choice and unbundling

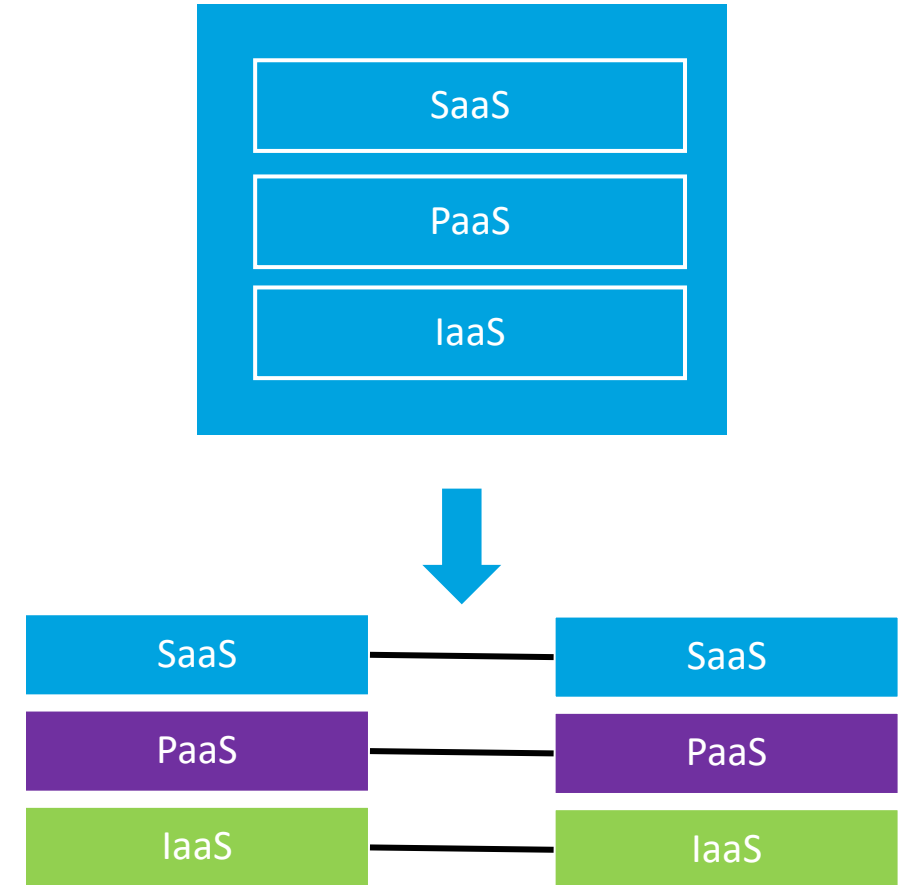
	Pre-Cloud	Cloud (Native) <i>Current cloud market</i>	Federated Cloud
Data & Management			<div style="background-color: #004a7c; color: white; padding: 20px; text-align: center;"> <p>1+1=3</p> <p>Combine advantages of Pre-cloud and Cloud Native</p> </div>
Application	Atos, ilionx, CGI, centric		
Platform	Red Hat, LAMP, IBM, django		
Hosting	leaseweb, transip, obit, EQUINIX		
Virtualisation	vmware, Citrix, XenServer, PROXMOX, Red Hat		
Hardware	IBM, Hewlett Packard Enterprise, Dell, SUPERMICRO, AMD, intel		
Interconnectivity	amsix, eurofiber, kpn, ndix, NLIX		

Keep: simplicity of deployment, integration and management



# How? ECOFEDs approach

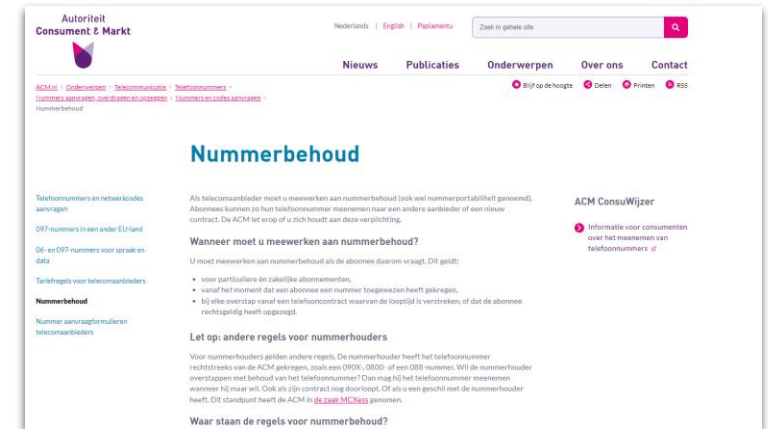
- From mono-cloud to multi-cloud
- “Vertical decomposition” of the cloud stack by disentangling technology stacks
- Make NaaS, IaaS, PaaS en SaaS layers interchangeable to make mix-and-match of applications and infrastructure
- Technology stack agnostic: divers technological landscape
- Technology should not enforce a specific business model



# Is Cloud Federation feasible?

## A parallel with the transformation of telecom market

- **Separation on infrastructure and services** on top of this infrastructure:
  - Telecom market: by separating telecom infra and telecom services it is possible to be a telecom provider without owning a network (Mobile Virtual Operators, MVO)
  - In NL: 3 telecom networks (KPN, Odido en Vodafone) and over 50 MVOs active (telco services on top of infra of the 3 networks)
  - Infrastructure sharing and infrastructure mixing to reach international coverage
  - Number portability and roaming: switching doesn't end the service quality
- Similar transformation have been made in Energy market and public transport



# Cloud switching in EU Data Act

## CHAPTER VI

### SWITCHING BETWEEN DATA PROCESSING SERVICES

Article 23: Removing obstacles to effective switching between providers of data processing services

Article 24:

Contractual terms concerning switching between providers of data processing services

## Several articles related to cloud switching

Article 25: Gradual introduction of switching charges

Article 26: Technical aspects of switching

Article 29: Interoperability for data processing services

Article 34: Interoperability for the purposes of in-parallel use of data processing services

Source: legal Data Act text: <https://eur-lex.europa.eu/eli/reg/2023/2854>



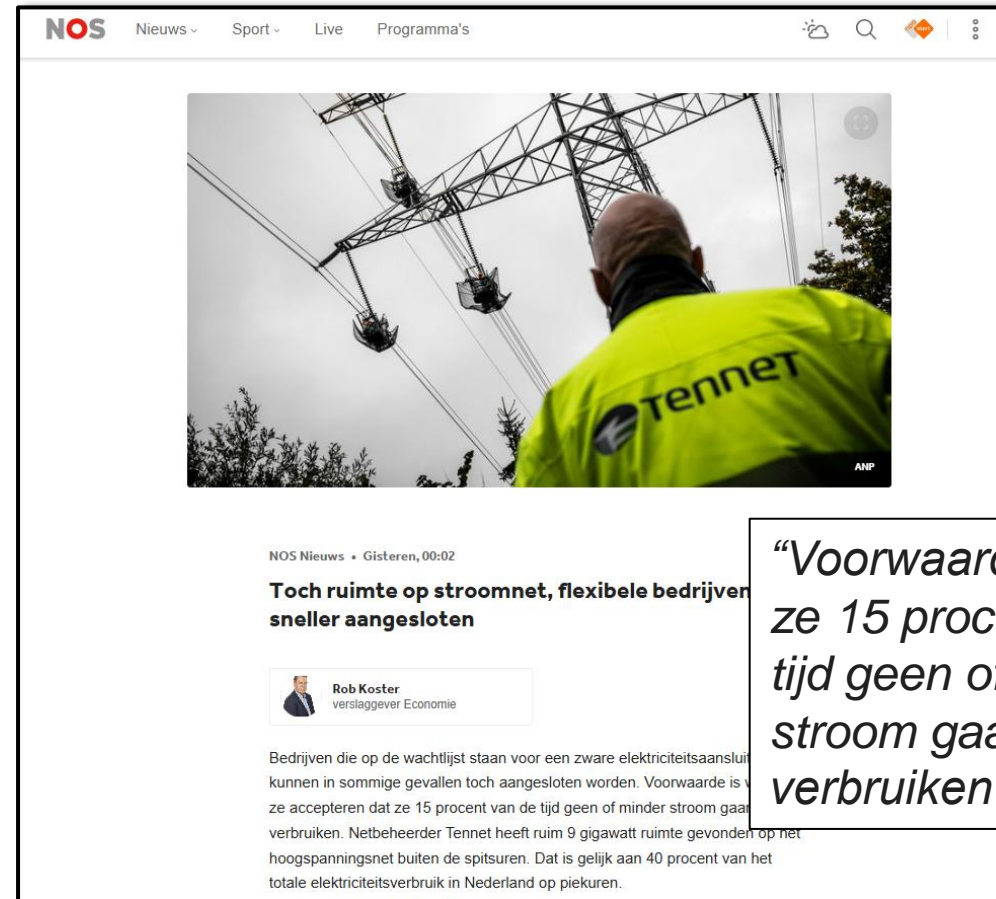
From the Data Act a **Central Union standards repository** will come containing:

- open specifications
- harmonized standards

# When clouds get more flexible...

- Orchestrators can compose cloud infrastructure based on energygrid data
- Move workloads between cloud providers
- Shift workloads in time and place

NOS 7 april 2025



The screenshot shows a news article from NOS. The main image is a worker in a yellow high-visibility jacket with 'Tennet' written on the back, looking up at high-voltage power lines. The article title is 'Toch ruimte op stroomnet, flexibele bedrijven sneller aangesloten'. The author is Rob Koster, verslaggever Economie. The text discusses how businesses can be connected to the power grid more quickly, with a condition that they accept a 15% reduction in electricity usage during peak times. It also mentions that Tennet has found 9 gigawatt of space on the high-voltage grid outside peak hours, which is equivalent to 40% of the total electricity consumption in the Netherlands during peak hours.

NOS Nieuws • Gisteren, 00:02

**Toch ruimte op stroomnet, flexibele bedrijven sneller aangesloten**

**Rob Koster**  
verslaggever Economie

Bedrijven die op de wachtlijst staan voor een zware elektriciteitsaansluiting kunnen in sommige gevallen toch aangesloten worden. Voorwaarde is dat ze accepteren dat ze 15 procent van de tijd geen of minder stroom gaan verbruiken. Netbeheerder Tennet heeft ruim 9 gigawatt ruimte gevonden op het hoogspanningsnet buiten de spitsuren. Dat is gelijk aan 40 procent van het totale elektriciteitsverbruik in Nederland op piekmuren.

*“Voorwaarde is ... dat ze 15 procent van de tijd geen of minder stroom gaan verbruiken”*

Questions? Interested to  
learn more?

NL ECOFED: [www.ecofed.eu](http://www.ecofed.eu)

EU IPCEI CIS: [www.8ra.com](http://www.8ra.com)

*Contact*

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A hand is shown holding a green circuit board with white traces and dots. The background features a blue globe with white grid lines and a large orange arrow graphic pointing upwards and to the right. The overall theme is technology and global connectivity.

**BEDANKT  
VOOR UW  
AANDACHT**