ETSI Summit on Sustainability

Some standardisation needs for green digital twin transition

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European Commission

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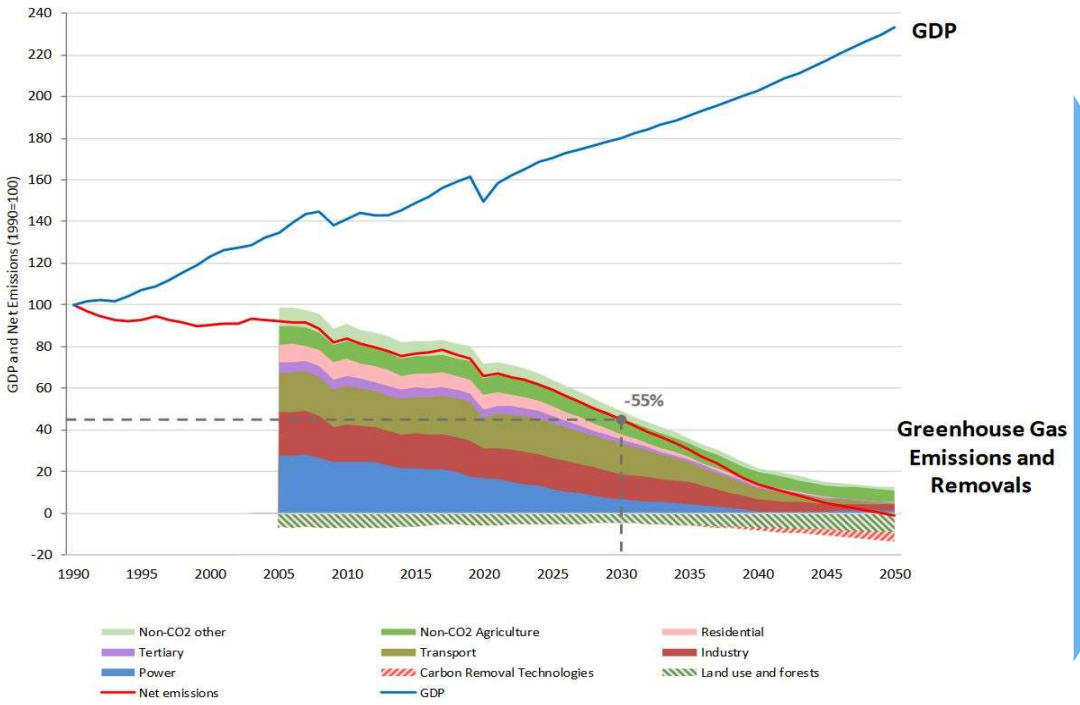
New Commission Priorities

- ***A European Green Deal***
- ***A Europe fit for the digital age***
- *An economy that works for people*
- *Protecting our European way of life*
- *A stronger Europe in the world*
- *A new push for European democracy*

*'..a once-in-a-generation opportunity to ensure Europe leads the way on the **twin ecological and digital transitions**'.*

Reducing GHG emissions by 55% by 2030:
A challenging transition for energy-intensive industries



	2015	2030 (= -55%, variations due to different policy choices)
Total GHG	3611,2 $MtCO_2$/year	~2100 $MtCO_2$/year
Industry	635,7 $MtCO_2$/year	493 – 502 $MtCO_2$/year (- 21% – 23%)
Road Transport	731,8 $MtCO_2$/year	588 - 593 $MtCO_2$/year (-19% - 21%)

Sector	CO_2 abatement/year	Est. investment needs by 2030
Steel	-33 $MtCO_2$/year	~€26.5B
Chemicals	-28 $MtCO_2$/year	€18.5B
Cement	-10,2 $MtCO_2$/year	€7.7B
Road transport	-140 $MtCO_2$/year	~€59B

2030 Digital Decade Targets

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DIGITAL SKILLS

Adults with basic digital skills

NOW 56%

TARGET 80%

Employed ICT specialists

NOW 8.4 million

TARGET 20 million

DIGITAL INFRASTRUCTURES

Gigabit network coverage

NOW 59%

TARGET 100% of households

5G coverage

NOW 14%

TARGET 100% of populated areas

The EU production of semiconductors, including processors, makes up

NOW 10%

TARGET ≥ 20% of world production in value

There are **10,000 edge nodes** in the EU for **better, secure and sustainable data processing.**

By 2025, the first **EU computer with quantum acceleration** is paving the way for cutting-edge quantum capabilities.

DIGITAL TRANSFORMATION OF BUSINESSES

BUSINESSES USING

Cloud computing services

NOW 26%

TARGET 75%

Big data

NOW 14%

TARGET 75%

Artificial Intelligence

NOW 25%

TARGET 75%

SMEs with at least a basic level of digital intensity

NOW 60%

TARGET > 90%

There are

NOW 122

TARGET **Double** the number of unicorn startups in Europe

DIGITALISATION OF PUBLIC SERVICES

Online access to key public services (related to career, studying, family, regular business operations, moving)

NOW 75/100 services for citizens

84/100 services for businesses

TARGET **All** services for citizens and businesses

TARGET 100% of Europeans with access to digital health records &

80% using a digital id

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Conflict

- ICT footprint: 2.1 and 3.9% of total GHG emissions;
- ~8% of total electricity demand, predicted to reach 13% by 2030
- eWaste- fastest growing waste category;
- Improvements in durability, reusability, reparability, refurbishment and recycling of consumer electronics and industrial equipment

Sustainable Digital Technologies

Climate Neutral and highly energy efficient datacentres by 2030: review **JRC's CoC,** the Energy Efficiency Directive and the Taxonomy Regulation

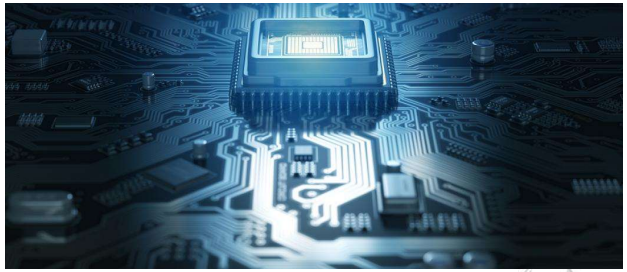
Greener electronic communications by 2030:

- Transparency measures
- Administrative incentives for green deployment

Circular Electronics Initiative: Better durability, reparability, refurbishment, recycling for consumer and industrial electronics & IoT

"Right to repair" for consumers.

Low power processors, software and AI: investing in new ultra-low-power



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Standardisation needs for the Green Digital Transition

- Topic 1: **Standards for measuring the environmental impact of digital infrastructures – datacentres, telecom networks, equipment.**
- **Action(s) needed:** standards to underpin the digital decade deployments that calls for deployment of sustainable infrastructure including datacenters, edge nodes and telecommunication networks
  - **SDOs involved** (if known, including TCs/WGs)**:** ITU, ETSI, CEN-CLC
  - **Ongoing work:** JRC, GeSI, BEREC, RSPG, National Regulatory Agencies, IEA, …
  - **Active Stakeholders:** JRC working on CoC for datacentres and indicators for telecommunication networks; EGDC partners and members; GeSI/DwP constituency, SDIA, INR, …

  Following the development of Code of Conduct for datacentres, standards are needed for accreditation/ auditability, methods and KPI for telecom services and digital solutions for energy networks as committed in the *Digitalisation of Energy Systems Action plan*

  To complement the best practices of the CoC for data centres, the Commission will work on defining data centre sustainability indicators in the context of the revised Energy Efficiency Directive

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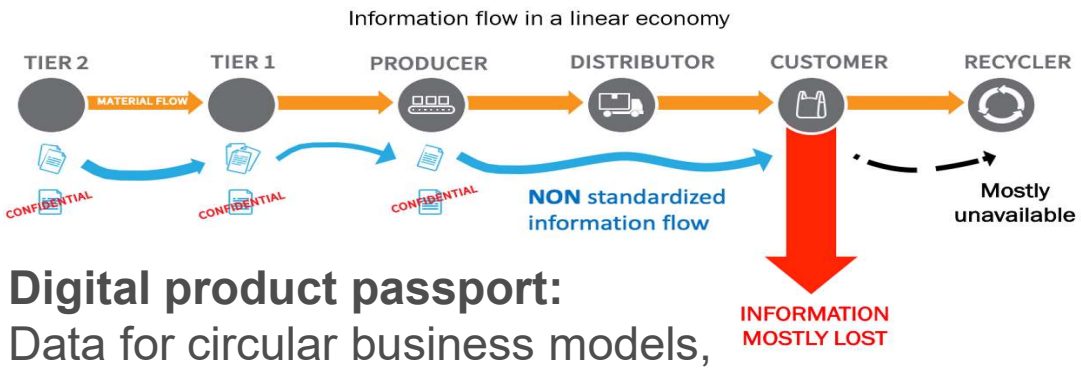
Synergies

- **Digital transformation for climate neutrality. Potential to reduce 15-20% of total GHG emissions and to accelerate the transition to Circular Economy**
- **Green transition can provide sustainable financing for digital transformation**

- To realise this potential, science based & standardised methods are needed to measure the positive contribution of digital solutions to environment
- This will also lead to sustainable finance for green digital (EU Taxonomy, Green Public Procurements)

Digital contribution to environment & climate



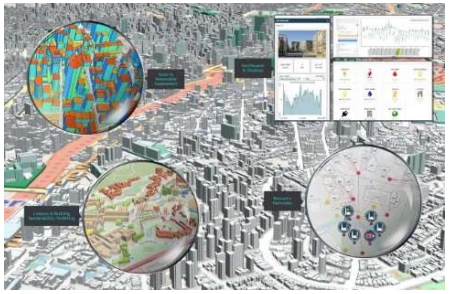
Digital product passport: Data for circular business models, Sustainable, integrated Single Market

Smart mobility: reduction of transport emissions up to 37%; **smart buildings** with emissions reduction by 17%;

ETSI ES 203 199 V1.3.0 (2014-12)

Digital contribution: reduction by up to 15%-20% of total emissions with deployment of today's technology.

Destination Earth / digital twins: High Performance Computing, AI for better anticipation of extreme events prediction, climate modelling.



Also: smart energy networks; Precision farming, Blockchain for emissions accounting, smart cities; AI for climate; smart manufacturing;

RRPs: Missed opportunity to use digital solutions for climate action

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Standardisation needs for the Green Digital Transition

- Topic 2: **Standards for measuring the net environmental impact of digital solutions**
  - **Action(s) needed:** ETSI - technically aligned deliverable with ITU L.1480
  - **SDOs involved** (if known, including TCs/WGs)**:** ITU, ETSI building on previous work such as ETSI ES 203 199
  - **Ongoing work:** methods and guidelines within the European Green Digital Coalition (EGDC), relevant work of GeSI/DwP;
  - **Active Stakeholders:** EGDC partners and members;
  - **Other** Guidelines for consistent implementation of the standard in various sectors (energy, transport, construction/buildings, agriculture, etc)

European Green Digital Coalition Declaration

37 CEOs of ICT companies, with 2040 Net Zero targets, have committed to take action in the following areas:

- Investing in the **development and deployment** of green digital solutions with significant energy and material efficiency that achieve a net positive impact in a wide range of sectors.
- Developing **methods and tools** to measure the net impact of green digital technologies on the environment and climate by joining forces with NGOs and relevant expert organizations.
- Co-creating, with representatives of other sectors, **recommendations and guidelines** for green digital transformation of these sectors that benefits environment, society and economy.

https://www.greendigitalcoalition.eu/

- Topic 3 **Standardisation of the Digital Product Passport system**

  - **Action(s) needed:** To arrive to a harmonised standard or specifications as committed in the Eco-design for sustainable product regulation
  - **Ongoing work:** Stand ICT working group, CIRPASS project
  - **Active stakeholders:** CIRPASS project (DEP), Stand ICT working group
  - **Other:** Needs to be finalised within 12 months

Transition to Circular economy

Sustainable products – durable, re-usable, reparable, refurbishable, …recyclable

Sustainable Business models – e.g. Product as a service,

Key enabler: Digital Product Passport

Recent EU legislations:

- Ecodesign for sustainable products - European Commission – product requirements, information requirements across who supply chain, **Digital Product passport** (30.3.2022)
- Empowering consumers for the green transition - European Commission (30.3.2022)
- Initiative on substantiating green claims - European Commission (coming soon)

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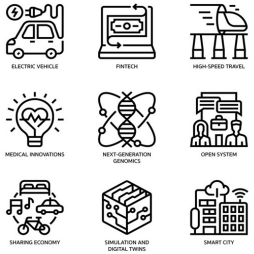
ESPR
Digital Product Passport (DPP) – expected benefits

Tracking of **raw materials extraction/production**, supporting due diligence efforts



Enable **manufacturers** to create products **digital twins**, embedding all the information required

Tracking the life story of a product, enabling services related to its **remanufacturing**, **reparability, re-use/re-sale/second-life, recyclability**, new business models

Benefit **market surveillance authorities and customs authorities**, by making available information they would need to carry out their tasks

Make available to **public authorities and policy makers** reliable information. Enable to link **incentives** to **sustainability performance**

Allow **citizens** to have access to **relevant and verified information** related to the characteristics of the products they own or are considering to buy/rent (e.g. using apps able to read the identifier

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Thank you !

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