



## Online Workshop/Webinar on Role of Standards & Policy in Resource Efficiency and Circular Economy Transition in India and the EU

January 21, 2022, at 14:00 – 17:00 Hrs. (IST) / 09:30 – 12:30 Hrs. (CET)

# Smart Electrification, Automation and Digitalization for Sustainability

Presented by M. Gommel



# Siemens' commitment to sustainability

## Our DEGREE framework sets clear priorities

**Decarbonization**  
support the 1.5°C target in the fight against global warming

**Employability**  
enable our people to stay resilient and relevant in a constantly changing environment

**Ethics**  
foster a culture of trust, adhere to ethical standards and handle data with care

**Equity**  
foster diversity, inclusion, and community development to create a sense of belonging

**Governance**  
apply state-of-the-art systems for effective and responsible business conduct

**Resource efficiency**  
achieve circularity and dematerialization



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# We leverage our Company Core Technologies in all our businesses...



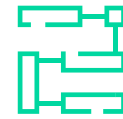
Simulation and Digital Twin



Sustainable Energy and Infrastructure



User Experience



Software Systems and Processes



Connectivity and Edge



Cybersecurity and Trust



Data Analytics and AI



Integrated Circuits and Electronics



Power Electronics



Automation



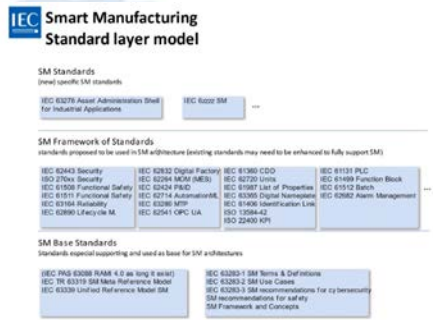
Additive Manufacturing and Materials



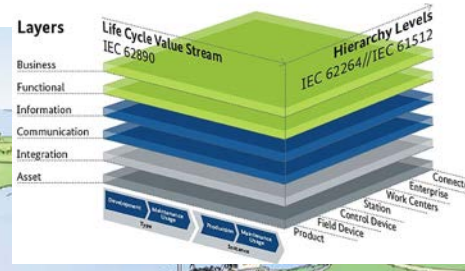
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# ... of Smart Electrification, Automation, Digitalization for Sustainability

Well defined system of international ISO/IEC standards is available - let's continuously develop it to improve sustainability



Referenzarchitekturmodell Industrie 4.0 (RAMI 4.0)



- IEC TC 4 Hydraulic turbines
- IEC TC 9 Electrical equipment and systems for railways
- IEC TC 13 Electrical energy measurement and control
- IEC TC 14 Power Transformers
- IEC TC 22 Power electronic systems and equipment
- IEC TC 23 Electrical Accessories
- IEC TC 65 Industrial-process measurement, control and automation
- IEC TC 69 Electric road vehicles and electric industrial trucks
- IEC TC 82 Solar photovoltaic energy systems

- IEC TC 88 Wind energy generation systems
- IEC TC 121 Switchgear and controlgear and their assemblies for low voltage
- IEC TC 120 Electrical Energy Storage (EES) Systems
- ISO TC 197 Hydrogen technologies
- ISO TC 22 Road Vehicles
- ISO TC 205 Building environment design
- ISO TC 269 Railway applications

IEC TC 8 Systems aspects for electrical energy supply

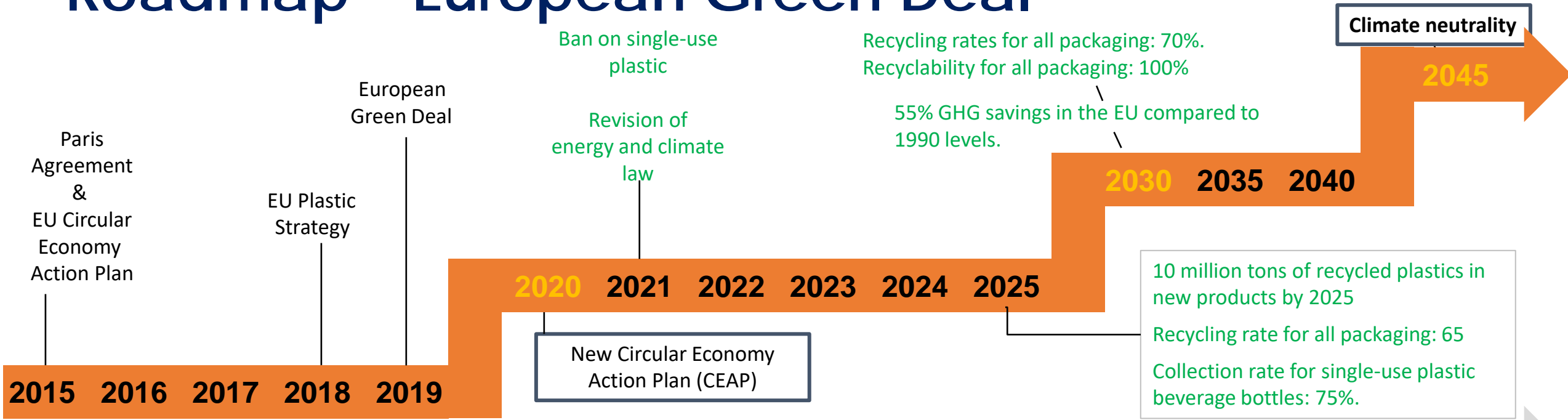
IEC TC 57 Power systems management and associated information exchange

IEC PC 118 Smart grid user interface



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# Roadmap – European Green Deal



## New Regulations, EU Taxonomy, Non-Financial Reporting Directive (NFRD), delegated act...

### Sustainable Products Initiative (Q4/2021) (extract)

- Improving the **durability, reusability, upgradability and repairability** of products
- Reduction of carbon **footprint** and environmental footprint
- "Exploiting the potential of digitizing product information, including solutions such as a **Digital Product Passport**"

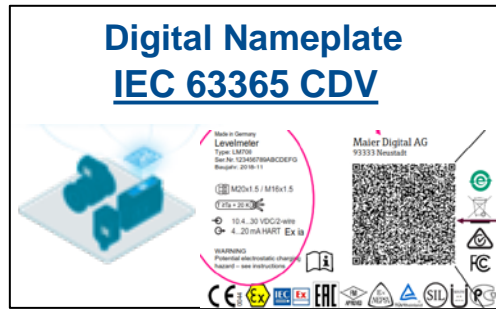


### Overall Measures at Product Level (extract)

- **European Circular Dataspace**: to publish **product datasets** with possible mandatory information for a better management of the **value chain**, linked to the idea of the **Product Passport**
- Mandatory application of the PEF – **Product Environmental Footprint**

# EU Digital Product Passport (DPP)“ will enable Digital Transformation and trigger Sustainability

## Product



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- Product Information**  
provided by manufacturer
- **IEC 62474 (Material declaration** for products of and for the E&E industry)
  - **PCF (Product Carbon Footprint)**  
-> ZVEI-Show-Case
  - ...

## Product lifecycle



The digital Nameplate (IEC 63365) will contribute to reduce tons of paper documentation and resources

Digital nameplate

Company information, manufacturing location, technical specifications, certificates, patents

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Product Information

- ...
- ...

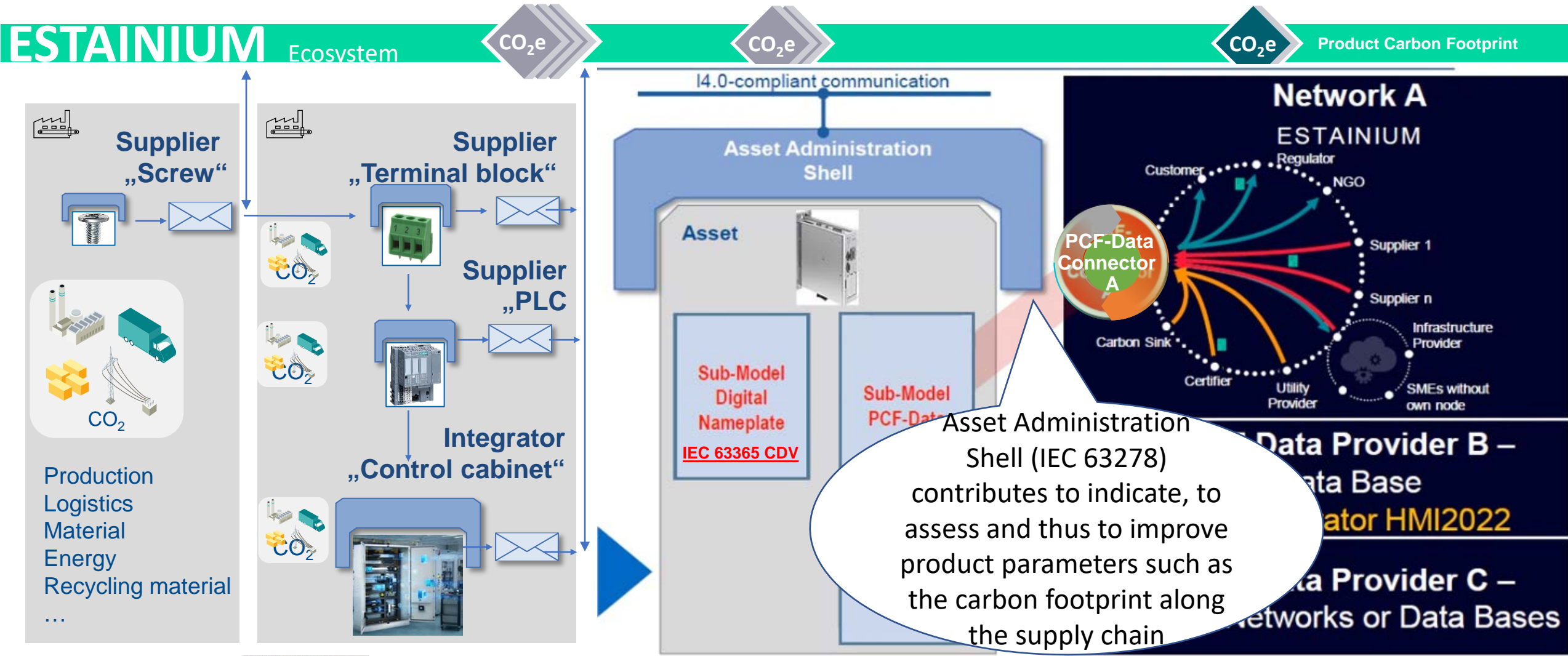
- **We agree** with the following proposals:
  - List of legislation and standards that the product complies with, or the technical specifications that it fulfils
  - Information on safe use and instructions, where applicable
- **We are neutral** on the following proposals
  - Information relevant for testing, disassembly, maintenance, repair or reassembly
  - Information on Product Environmental and/or carbon footprint, or other relevant sustainability characteristics
  - Any possession of sustainability labels, such as the EU Ecolabel
  - Information on how the product should be recycled and /or handled at the end of life
- **Other information provided by the manufacturer**
  - - Digital Services
  - - New Business Models

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EU Digital product passport

„Digital €€“

# Showcase „Carbon Footprint of Control Cabinet“



Source: ZVEI, Siemens, Prof. Dr. Dieter Wegener



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Thank you!

## Contact Details

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