BDI

POSITION PAPER | EUROPEAN GREEN DEAL | "FIT FOR 55"

Towards the 2030 reference architecture

Essential building blocks for moving from targets to smart action

12th March 2021

Executive Summary

On 11th December 2020, the European Council endorsed a binding EU target of a net domestic greenhouse gas reduction of at least 55 % by 2030 compared to 1990. EU leaders aim at raising their climate ambition in a manner that should spur sustainable economic growth, create jobs, deliver health and environmental benefits for EU citizens and contribute to the long-term global competitiveness of the EU economy by promoting green innovation.

As Europe´s Climate Law is subject to final negotiations, the European Commission prepares for the translation of these new political ambitions into motion. Comprehensive legislative implementation packages have been announced in the Commission Work Programme for 2021 to simultaneously manage Europe´s climate and digitalisation flagship agendas as well as the COVID-19 recovery. This is a Herculean task.

Considering that an industrially strong Europe ensures social cohesion and prosperity and that climate ambition is turned into tangible results and benefits for all as soon as it is working hand in hand with economic ambition, this paper outlines the key principles that according to the Federation of German Industries should guide this process. It provides cross-cutting policy recommendations that should be taken into account when designing the European Green Deal reference architecture for 2030. Three core priorities are moving centre stage:

1. **Renewed and reinforced international cooperation** will be key to hold the increase in global temperature rise and to strengthen industries´ global competitive edge in the light of the EU´s 8 %, and decreasing, share of global emissions.
2. **An industrially strong and competitive Europe** is the basis not only for a fair, inclusive and economically feasible transition but also for Europe to serve as a sustainable global role model that others will wish to follow. An integrated innovation and investment programme for this decade is key.
3. Backing climate goals with **a smart enabling framework and holistic mix of instruments** requires **a comprehensive, well thought-through toolbox at EU level**. In addition to a competitive, resilient industrial base, it should build on Europe´s further strong assets, including the EU Single market, the pooling of financial, innovation and trading powers, create cost efficient market based incentives and harness the potentials of digitalisation for climate neutrality across the different sectors of the economy.

The BDI promotes the following **nine principles and core recommendations** for the development of the 2030 Green Deal architecture, which we specify in this paper:

1. An industrially strong and competitive Europe post-Covid

- Boost Europe´s industrial leadership and global competitiveness and present **a Green Deal business plan** with an **updated industrial strategy** that includes **a robust industrial target and set of indicators**
- Adopt an industrial policy **action plan** that unleashes industry´s innovation, investment and transformative power, through e.g. IPCEIs, European platform ecosystems and common data spaces
- Shield European industry from unfair competition, including through **strong and effective carbon leakage protection** as it operates at the highest level of environmental protection worldwide

2. Turning climate protection into business models

- Mobilise **public and private capital -** build **a financial bridge for economically not viable investments**
- Design **sustainable finance policies**, notably an EU Taxonomy that truly supports, enables and rewards industry on its transformation path in a technology open and realistic way
- **Modernise EU competition and state aid rules** (make OpEx support and carbon contracts for difference eligible in addition to CapEx support especially for the ramp up of the hydrogen economy and revisit the framework for sustainability cooperation of companies)

3. Gearing Green Deal implementation towards global competitiveness

- Develop a **global carbon pricing roadmap** and **common price for 2030** at least at G20 level
- Strive for **a Transatlantic Pact for Climate Neutrality** with the new Biden administration and drive global technology leadership, including a new Alliance for Green Tech
- Lift **energy and climate diplomacy with all international parties** to the next level

4. Sustainable energy is the backbone

- Lead in scaling the **hydrogen economy** at home and globally
- Ensure abundant access to **renewable energies** at competitive and transition supporting prices
- **Invest in energy infrastructures at all levels,** including smart grids, hydrogen and CO2 networks
- If extending the scope of the **EU ETS** to transport and buildings, opt for separate systems

5. Accelerating building renovation

- **Prioritise mobilising investment** and coordinate the mobilisation of funding to convincingly apply the “efficiency first”-principle for reducing the CO2-footprint of the buildings sector
- Create appropriate **additional incentives for the use of renewable energies in buildings** and consider **CO2-neutral energy sources** also for the building sector
- Apply **an integrated approach to building renovation** to boost the management of energy consumption, energy production and energy storage of buildings

6. Sustainable mobility for all

- Tap into the benefits of **each transport mode**, provide long-term **R&D** and use **digitalisation**
- Set the EU framework for the efficient **market ramp-up of alternative drive systems (BEV, PHEV, FCEV) and fuels (H2, E-Fuels, advanced biofuels)** and their **charging and refuelling infrastructures,** including appropriate framework conditions for the market ramp-up of H2 and PtX technologies
- Grant **tax exemptions for low-carbon-fuels and CO2-neutral fuels**, strengthen **intermodality** and recognise the **global nature of air and maritime transport**

7. Realistic and achievable EU environmental law and a market-driven Circular Economy

- Present **initiatives for better implementation and application of EU environmental law** and base any new initiative on the **three pillars of sustainability**
- Develop **recycling and secondary raw material markets** and **secure targeted support** for adapting to a sustainable product policy approach and for developing recycling/secondary raw material markets
- Effectively handle **substances of concern in waste and recycled materials** and carry out **a cost-benefit analysis of the "SCIP"-database** of the EU Waste Directive
- Apply **life cycle thinking** when setting product design measures

8. Unlocking the potential of digitalisation for decarbonisation

- Speed up **investment in digital, energy and transport infrastructure**
- Promote **cyber-resilience** and **cybersecurity** (hardware and software) **standards**
- Unlock **new business models through future EU data spaces and** distinguish **B2B from B2C platforms**

9. Building public acceptance

- Lead **an honest debate** about the necessary change of behaviour and consumption patterns to build acceptance for innovative low-carbon and breakthrough technologies
- Provide **incentives** to citizens, such as tax rebates for energy efficiency investments in buildings
- Involve **industry as a partner** in building acceptance

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1. Introduction: One Year European Green Deal - Guiding principles for the way forward

The Herculean task of managing COVID-19 recovery and the twin climate and digital transition

In December 2019, the European Commission tabled its overarching political flagship initiative and new sustainable growth strategy: The European Green Deal. The target of becoming climate neutral by 2050 is soon to be set in stone through the new EU Climate Law.

Only shortly after the European Green Deal was launched, Europe and the world were hit by the COVID-19 pandemic causing the biggest economic crisis since world war II. Economic recovery and "building back better" remains the key challenge, while the transformation to climate neutrality alone already means a fundamental restructuring of society as a whole at unprecedented scale, including financial and speed.

Throughout 2020, a series of thematic strategies has then been issued, including the EU Hydrogen, Offshore, Energy System Integration or Smart Mobility Strategies, the new Circular Economy Action Plan or Renovation Wave. With them, the inherent Green Deal system challenges, complexities and global interdependencies of tackling climate change became apparent as well as the opportunities of eco-system innovation, innovative low carbon technologies and the transformative power of digitalisation. Reinforced international cooperation and partnerships will be important catalysts in all respects, including from the perspective of managing rising investment and carbon leakage risks.

2021 now sets a Mammoth task: turning the strategic Green Deal vision into smart action for the future of Europe, its industry, the planet and the people in a globalised world that is fiercely competing in resetting the global order in times of decarbonisation, digitalisation, increasing decentralisation and demographic change. It´s all about turning the Green Deal into a Smart Implementation Plan to boost Europe´s global industrial and technological leadership and its beliefs in multilateralism, open rule-based global trade, innovation, sustainable growth and jobs, future prosperity and social cohesion.

German industry sees opportunities arising from the Green Deal and adheres to Europe´s climate goals. For decades, Germany has made a significant contribution to the increasingly efficient use of natural resources by providing innovative technologies and products and its production processes apply the highest levels of environmental and social protection in the world. German companies are constantly investing in a clean environment and in climate protection measures and are world leaders in many "green" technologies. In addition, Germany is also a leader in the trade and export of domestically developed and tested environmental goods, accounting for some 14 percent of global trade.

To meet the reinforced requirements of the Green Deal, however, structural reforms, such as of taxation, public procurement rules or CO2 cost compensation, will have to be taken. Industry needs an enabling framework at various levels to bolster its future competitiveness.

Moving on from strategy to smart implementation and global competitiveness

Backing climate goals with a smart enabling framework and holistic mix of instruments requires a comprehensive, well thought-through toolbox. At EU level, urgent progress is needed on key issues, such as the new industrial policy, carbon pricing, the EU emission trading reform, the expansion of renewable energy sources, energy efficiency, building renovation or the market ramp up for a European hydrogen economy, to name but a few. At the same time, opportunities should be taken to turn the Green Deal into a "Smart Deal" which at the same time gives impulses for more climate protection and impulses for post-COVID recovery and for economic growth.

A consistent, well-designed 2030 Green Deal reference architecture needs to be “fit for 55” at several levels: at policy level, at industrial level and at global level.

The BDI believes that the following principles should guide the development of the new Green Deal reference architecture:

1. An industrially strong Europe post-Covid as the starting point
2. Turning climate protection into business models
3. Gearing Green Deal implementation towards global competitiveness
4. Sustainable energy is the backbone
5. Accelerating building renovation
6. Sustainable mobility for all
7. Realistic and achievable EU environmental law and a market-driven Circular Economy
8. Unlocking the potential of digitalisation for decarbonisation
9. Building public acceptance

2. An industrially strong Europe post-Covid as the starting point

Europe can be proud of its industry: Since 1990, industry has not only made its contribution to realising EU climate goals. It employs around 32 million people across Europe, more than eight million of them in Germany. It is the core pillar of the EU economy and drives welfare and prosperity for all. With its innovation and investment power, it is also the engine of the energy and climate transitions. Climate mitigation and adaptation depend on an industry that emerges from the Covid-19 crisis strong, healthy and globally competitive.

Notwithstanding recent long-term climate commitments of Europe´s global trading partners, international competition remains fierce. In the fight against increasingly protectionist trade measures from third countries that apply significantly lower environmental and social standards, industry needs EU policy to stand by its side. Carbon leakage risks are real and need to be tackled seriously and in a resilient way. Industry´s innovation capacity and investment power need to be continuously promoted.

Further enhancing an industrially strong Europe with competitive value chains, jobs and companies on the continent is a precondition for a fair, inclusive and economically feasible transition, all the more in times of unprecedented economic crises. To turn climate challenges into business opportunities and enable Europe to serve as a credible global role model, the Federation of German Industries advocates for taking the following actions:

- **The updated Industrial Strategy should:**
  - Set an ambitious **industrial target 2030**
  - Provide a concrete industrial policy **action plan** and set of **indicators**
- **This action plan should:**
  - Enable **private investment** in climate-protecting technologies
  - Support emission reductions in the **mobility** sector
  - Develop an **import strategy for renewable and low carbon energy carriers**

- Provide strong and effective **carbon leakage protection** for European industries, which operate at the highest level of environmental protection worldwide
- **Revise the legal and financial framework** for Important Projects of Common European interest **(IPCEIs)**
- **Launch IPCEI II for microelectronics** as soon as possible
- **Promote hydrogen decisively and approve the IPCEI on Hydrogen**
- **Revise competition and state aid rules**
- Make **5G** applicable for industry while already thinking of **6G**
- Create **legal certainty for the General Data Protection Regulation**
- Promote the **European platform ecosystem** and rapidly advance common European data spaces

3. Turning climate protection into business models

Massive public and private investments will be required in the transition to climate neutrality. According to the BDI´s Climate Path Study, the achievement of an 80 % climate target would require an overall of additional investments of around 970 billion EUR for Germany, provided optimal implementation conditions and similar international action. Achieving a 95 % climate target would require further 800 billion EUR, some 180 billion EUR of which would be needed for the development of production capacities for synthetic fuels abroad. The cost-effective achievement of the climate pathways would require additional investments totalling 1.5 to 2.3 trillion euros by 2050 compared to a scenario without increased climate protection. While making sense from a macroeconomic point of view, around four fifth of investments do not pay off for the individual investor. This needs to change.

Also, the COVID-crisis worsens the conditions for making private investments, notably equity, which has to be countered by an integrated investment and transformation programme at EU and national level. Notwithstanding the important steps made by the Multiannual Financial Framework and Next Generation EU, mobilising public and private capital to build a financial bridge for economically not viable investments in new technologies remains the hot topic. To stimulate the investment power of companies, proper framework conditions are necessary so that Europe is attractive as a business location and that companies that get on the transition path are rewarded and supported.
Incentives for the development and deployment of low carbon technologies will be needed and EU state aid and competition rules will need revisiting.

Since new technologies very often come with higher operating cost new ways will have to be found how innovative companies can be supported especially for the ramp up of the hydrogen economy, not only with respect to higher CAPEX but also to higher OPEX.

Carbon pricing policies and structural reforms need to advance urgently.

First and foremost, sustainable finance policies, notably the EU Taxonomy, need to be designed in a way that they truly support industry on its transformation path in a technology open way. The implementation of the Taxonomy Regulation must not turn into a bottleneck for urgently needed transformation loans but instead help, reward and support companies in managing the transition and in building up new business cases over the next decade(s) on the road to climate neutrality. Excluding indispensable transition technologies from this transformation path would backfire on Europe´s technology, climate and industrial leadership. We therefore support the guideline given by EU Heads of States in December 2020 that the right of Member States to choose their energy mix and transition technologies should be respected when implementing Europe´s new climate goals.

German industries also advocate for focusing on growth-friendly tax policies in Europe. An additional burden on individuals and businesses would run counter Europe's economic recovery and increase the costs of doing business.

Finally, public authorities are major consumers in Europe: they spend approximately 1.8 trillion euro annually, representing around 14 % of the EU's gross domestic product.

By using their purchasing power to choose goods and services they can lead by example and invest in innovative technology solutions.

The Federation of German Industries provides the following recommendations:

- **Sustainable finance – EU Taxonomy Regulation:**
  The delegated act on climate mitigation and adaptation criteria under the EU Taxonomy Regulation should
  - classify "electricity generation and CHP from gas" as sustainable activities if they emit less than 100gCO2e/kWh in the life cycle.
  - classify "electricity generation and CHP from gas" as transitional activities if they emit, on average, over the life cycle of the installation, less than 250gCO2e/kWh, and in the case of CHP the heat bonus method should be applied, as in the case of the European Investment Bank. Alternatively, for CHP plants, the greenhouse gas emissions can also be related to the fuel input. In this case, the limit value should be 200g CO2 per 1 kWh fuel input. In any case, in 2050 the direct emissions of the plant should be below the value for electricity generation from gas as a sustainable activity.
  - apply the best available techniques approach of EU Implementing Decision 2017/1442 under the environmental objective "Climate Adaptation", instead of a limit value for the "Do No Significant Harm" criterion for gas-fired power generation. The threshold of 270g CO2e/kWh for cogeneration should refer to kWh of electricity generated (kWhe) on average over the lifetime of the plant (applying the heat bonus) – following the approach of the European Investment Bank.
  - Remove the current discrimination of generation with biofuels against other solutions for the production of electricity and cogeneration with renewables: Following a technology-neutral approach, the use of biofuels that comply with REDII must be equally treated to other REDII compliant solutions and be regarded as sustainable in accordance with Art 10(1) of Regulation (EU) 2020/852.
  - Do not penalise technologies that have different uses when these are used in renewable applications: It should be clearly specified that technologies and core components used for the production of electricity and heat from renewable energy sources as defined in Art 2(1) of Directive (EU) 2018/2001 are included in the scope of "renewable energy technologies" in category 3.1. of annex I.
  - The Taxonomy needs to recognise the contribution of technologies used in transitional activities – when these can prove to be future-proof – and, accordingly, consider their manufacture an enabling activity in accordance with Article 10(1), point (i).
  - classify "the demonstrable and consistent conversion of gas grids and gas storage to operate on 100 % renewable and decarbonised gas by 2050 at the latest" as sustainable activity.
  - Clarify for the category "manufacture of low carbon technologies" the meaning of "substantial GHG emissions savings" as well as how to identify the "best-performing-alternative" on the market.
  - ensure that the EU Taxonomy for Sustainable Finance contributes to a significant increase of energy efficiency in the building sector.
- As regards capital market financing in particular, **develop transparent, standardised sustainability reporting** and seek **international alignment**

- As regards the lending business, **develop practical standards** for providing sustainability information without excessive administrative burden
- Ensure **consistency of regulations within the EU Taxonomy with existing EU rules**, in particular environmental legislation, and **avoid double regulation**
- Rather than leading to a finalised list of technologies **ensure the possibility of regular updates in line with continuous technological developments:** a negative list that a priori excludes certain technologies from access to sustainable finance is inappropriate
- **Abstain from causing competitive disadvantages for European companies and investors vis-à-vis other financial markets**. Investments must neither be withdrawn from the EU, nor EU competitive distortions due to different implementation of the EU Taxonomy arise.
- When revising the **Energy Taxation Directive:**
    - at least promote carbon neutral energy sources - these should be exempted from taxes and levies.
    - provide technology-neutral incentives for greenhouse gas savings to help the creation of new business models.
    - continue to guarantee the proper functioning of the European Single Market, the international competitiveness of European companies and avoid tax discrimination
- **Increase funding for horizontal R&D,** primarily with a focus on industry-oriented collaborative research that contributes to market-driven investments and long-term competitiveness; ensure attractive funding conditions for industry in Horizon Europe with the aim of developing climate-friendly technologies and accelerating their marketability and implementation
- **Modernise EU competition and state aid rules in support of the Green Deal:** revise the framework for Important Projects of Common Interests (IPCEIs); IPCEIs can be a promising tool to strengthen European strategic autonomy in key industrial sectors; provide for the eligibility of OPEX and Carbon Contracts for Difference in addition to CAPEX financing especially for the ramp up of the hydrogen economy; provide a reliable framework for future sustainability cooperation of companies and ensure planning security for companies.
- **The German Recovery and Resilience Plan** should not be limited to refinancing existing national programmes for climate relevant projects but go beyond, in particular in the areas of infrastructure and building renovation, when implementing the obligation of dedicating at least 37 % of the facility to climate projects.
- Lead by example in **public procurement**

4. Gearing Green Deal implementation towards global competitiveness

Bringing EU climate and energy diplomacy to the next level

Europe accounts for some 8 % of global greenhouse gas emissions. It is self-explanatory that successful climate protection requires global action. Therefore, German businesses welcome the new dynamics that have recently occurred in global climate policies, notably the United States re-joining the Paris Agreement and latest long-term climate commitments made by Europe´s trading partners, the United States, UK, China, Japan, South-Korea or Russia.
It will be particularly crucial that such long-term climate commitments will be underpinned by similar short-term policy actions for 2030 as Europe envisages to undertake them. As long as this is not the case, EU industries will need (extended) support in fierce international competition and the fight against increasingly protectionist trade measures from third countries. Carbon leakage is a palpable and significant risk.

It is in our view particularly relevant that the global community works harder on removing fossil fuel subsidies, invests more in renewable energies, aims at converging its carbon prices and in a first step agrees on a common price for 2030 at least at G20 level. This would drive new investments all around

the world, provide security for green investments and give our European businesses a head start. Such an approach has the potential to reduce carbon leakage risks as well as trade disputes.
The Federation of German Industries recommends the following actions:

- **Develop a carbon pricing roadmap within the G20,** in particular with key partners such as the United States, Japan and China. It is crucial that the global community converges its carbon prices and in a first step **agrees on a common price for 2030**. G20 and COP26 should prioritise these actions.
- Strive for **a Transatlantic Pact for Climate Neutrality** with the new Biden administration and drive global technology leadership, including a new Alliance for Green Tech.
- Increase efforts working towards creating **an effective and efficient instrument under the umbrella of Article 6 of the Paris Agreement:** such an instrument will strengthen EU technology exporters and producers as well as stimulate more climate action around the globe. These instruments consist of creating carbon markets, direct enabling finance or forward-looking technology cooperation. By taking into consideration investments made by European exporters in technology transfer projects globally under the Paris Agreement, global cost-efficient investments in emission saving technology will be incentivised.
- Ratify, implement and enforce the **EU-China Comprehensive Agreement on Investment (CAI)**
- Carefully monitor **other regions short term measures for 2030** (China 5-year plan, China-ETS, US climate action) and make EU carbon leakage protection measures evolve accordingly
- Build international partnerships for the hydrogen economy and develop an **EU import strategy for renewable energy carriers**
- **The new strategy on international energy engagement and the new Africa - EU Green Energy Initiative,** as announced by the Foreign Affairs Council on 25 January 2021, should support Europe´s shift to a hydrogen economy and enable new alliances for sustainable technology transfer and long-term energy cooperation.
- Implement the **mandate of the EU-UK Trade Agreement for linking the EU-ETS and the UK-ETS** without delay
- **Trade Policy review**: Reinstall a strong WTO and lead in WTO reform (e.g. towards a functioning dispute settlement, effective provisions on transparency and industrial subsidies, market access); make binding climate commitments in future trade agreements if not delaying the conclusion of deals; pursue cooperative approach for sustainability chapters in trade agreements

5. Sustainable energy is the backbone

The energy sector accounts for 75 % of EU greenhouse gas emissions. This underlines the energy system's central role in the transition to a climate neutral economy. Current Commission projections in the impact assessment to the Green Deal indicate that, if current policies are fully implemented, greenhouse gas emissions reductions by 2030 would be around 45 % compared to 1990 levels when excluding land use related emissions and sinks (LULUCF), and around 47% when including land use changes. The Commission's analysis also indicates that aggregated final national energy and climate plans (NECPs) by all EU-Member States would surpass the renewable energy target at EU level by 1.7 percentage points while underachieving on the energy efficiency target by around 3 percentage points. Combined, this would result in only around 41% greenhouse gas emissions reductions (excluding LULUCF) by 2030 for the EU.

The BDI believes that an integrated energy system with a resilient EU-wide infrastructure, functioning markets and abundant renewable energy at competitive prices is a pre-condition for reaching climate-neutrality while maintaining industrial value creation in the EU.

The goal of climate neutrality requires a comprehensive approach in all sectors by using existing and innovative technological solutions. Regulation should not determine which technology is used or which energy carrier should or should not be used in which sector. Climate-neutrality is reached best in an open competition between energy carriers and different technologies.

Through the clean energy package, Europe has paved the way for a future, more flexible and competitive electricity system characterised by the parallel existence of centralised and decentralised electricity generation. Modernising and investing in smart electricity grids at all levels will be key for achieving the EU climate goals.

In addition, the BDI considers clean and low carbon hydrogen with its derivatives and climate neutral gases to play a particularly important role in sector integration and reaching the objective of climate-neutrality. The development of a sustainable hydrogen economy can become a key element in the economic recovery of the EU post Covid-19 pandemic, as already rightly noticed in the Recovery Plan for Europe.
The establishment of an internal hydrogen market will be crucial to meeting the expected hydrogen demand, and hydrogen will in addition to direct electrification be an essential enabler of climate neutrality in key sectors, such as industry and transport. At the same time, the EU can become a key player in a changing energy landscape contributing to decarbonisation efforts of other regions and creating a perspective for today's energy exporters.

German industries also contribute to increasing energy efficiency gains at home and abroad through innovative and intelligent technologies and materials.

The BDI calls for a consistent energy and climate policy with as much market as possible and clear, reliable framework conditions.

Besides, the BDI promotes the EU emissions trading as a leading instrument and pushes for creating a common carbon market with the most important trading partners based on equal conditions for all players. While taking note of the ongoing discussions regarding an extension of the current EU ETS to other sectors it is vital to acknowledge that such an extension would jeopardise incumbents and thus the future of the existing system. Only separate emissions trading schemes could be envisaged at the beginning, with a view of eventually merging the systems towards 2050.

As regards the "Fit for 55" package, the announced revision of the ETS Directive should be closely tied in with the revision of the ESR, the ETD and RED, the State Aid Guidelines (EEAG) or any possible WTO-compatible Carbon Border Adjustment Mechanism (CBAM) proposal. Companies in the EU that face significant carbon leakage risks will need (extended) carbon leakage protection. Many German industries harbour reservations against CBAMs as these are not fit to replace the existing EU-ETS mechanism of free allocation and indirect cost compensation. Prior to implementation, the EU needs to intensively discuss its concrete CBAM plans with WTO members and key partners in order to align measures and avoid trade conflicts.

Carbon pricing – if implemented wisely – can be a cost-efficient mitigation instrument. Should the work on Article 6 of the PA progress sufficiently, the EU should carefully reassess its opposition against the use of international credits already before 2030. To promote international carbon markets using e.g. (properly monitored and verified) ITMOs in the EU ETS should eventually be allowed.

Free allocation of allowances within the 4th ETS trading period must prevail as long as non-EU competitors do not face the same carbon price and allocation scheme, in particular in times of COVID-19. Urgently necessary investments will only be realised if potential investors see opportunities and adequate return on investment, meaning that framework conditions need to be as stable and predictable as possible.

Against this background, the BDI supports economy-wide carbon pricing but recommends abstaining from extending the existing EU ETS to buildings and road transport before abatement costs do not converge significantly.

Finally, the BDI Climate Path study has identified several "game changers" that have the potential to make it easier and cheaper to achieve the climate targets in the coming decades. These include next to technologies for the hydrogen economy and processes for the capture and reuse of CO2, so-called carbon capture and utilisation processes. Their readiness for use is not yet foreseeable with certainty and is therefore not assumed. However, they should be researched and developed as a priority.

The Federation of German Industries recommends the following way forward:

- **Ensure the availability of abundant renewable electricity at competitive and transition supporting prices:** expand the installation of RES plants across the EU, bring down the costs of renewable electricity and adjust existing renewable energy support mechanisms; ensure competitive energy costs in general
- **Lead in the development of the hydrogen economy**:
  - establish an **effective certification scheme for renewable electricity and climate-neutral gases and fuels**
  - develop the **relevant market design and harmonised regulatory framework**, and in particular:
    - evaluated whether the **Gas Directive 2009/73/EC** is applicable to operation of pure hydrogen pipelines.
    - define **common standards for the share of hydrogen in methane pipelines** at the border interconnection points to ensure a cross-border interoperability of gas networks.
    - amend the relevant **Network Codes** in order to enable cross-border hydrogen trade.
  - establish an **import strategy for renewable energy carriers**.
  - pursue **a technology neutral approach for the definition of renewable hydrogen**.
  - rapidly **approve the newly proposed IPCEI on Hydrogen**.
- **Invest in energy infrastructure at all levels,** including smart electricity grids at all levels and the development of a functioning European hydrogen infrastructure and CO2 networks
- Promote R&D in **CCS and CCU technologies -** clearly commit to CCU technologies and methane pyrolysis
- As regards the review of the **Renewable Energy Directive**:
  - Introduce **a CO2-based classification and certification system** for climate neutral gases
  - Establish **a link between Guarantees of Origin (GO) and sustainability certificates**
  - Simplify **permitting**
  - **Extend the financing mechanism** to hydrogen production facilities in combination with RES production facilities (hybrid projects)
  - **Promote renewable hydrogen and synthetic fuels in transport**
  - Allow **Carbon Contracts for Difference** as financing tools especially for the ramp up of the hydrogen economy
- **Promote energy efficiency first in a technology open manner** and continue ecodesign and energy labelling policies based on life cycle thinking; when applying the “energy efficiency first” principle, all climate neutral technologies should be deployed to reach the 2030 target and opportunities of energy imports should be taken into account
- **As regards the EU ETS reform**:
  - **If extending the scope, opt for separate ETS systems**: Until 2030 the scope of the EU-ETS should not be extended to buildings and road transport considering the significant difference of abatement costs in the various sectors.

Setting separate EU-wide trading systems for buildings and road transport might be adequate to introduce effective carbon pricing in these sectors with a view to establishing an overall trading scheme post-2030.
  - **Minimise interactions with the EPBD if carbon pricing is introduced for buildings**. Similarly, this holds for road transport and the envisaged revision of the fleet limit values and the Alternative Fuels Infrastructure Deployment and Renewable Energy Directives.
  - **Design an upstream system should an ETS covering all emissions from fossil fuels combustion be envisaged**. Setting up a (new) upstream system should target the time post-2030, since otherwise current ETS incumbents will not be able to handle the shock of the existing system being overturned rapidly.
  - Take into account that the ETS should offer **an appropriate number of allowances** so that EU industry can remain competitive
  - Re-think the mechanism of the **Market Stability Reserve** given new realities since its introduction
  - **Evaluate lowering the activity thresholds of Annex I of the ETS Directive** in the interest of better harmonisation also for small scale installation
  - **Use ETS revenues for reinvestment** in climate protection and energy savings projects
  - **Should a WTO-compatible CBAM be introduced,** ensure complementarity to ETS free allowances, international cooperation (e.g. with partners like the United States) and transparency (e.g. via ex-ante debate in WTO) and opt for a test phase first after having carried out sector specific impact assessments covering entire value chains
- **Tap into the potentials of digitalisation of the energy sector** to boost for example, energy management and demand side flexibility solutions, smart grids technologies or e-mobility and autonomous driving.

6. Accelerating Building Renovation

Buildings account for 40 % of Europe´s energy consumption and 36 % of total EU greenhouse gas emissions. There are some 210 billion buildings in the EU and an estimated 80 % of the existing building stock in the EU can be expected to still be there in 2050. However, with current renovation rates it would take more than a century to decarbonise the building sector.

Therefore, the EU Commission's proposal to initiate a ‘renovation wave’ is very welcome in principle. The intended renovation wave offers a great opportunity to turn the "Green Deal" into a "Smart Deal", which simultaneously stimulates climate protection and post-COVID economic recovery in the EU. Energy efficiency building renovation not only generates direct CO2 emissions reduction, it also makes very high local value-added contributions in terms of job and EU wide value chain creation.

At the same time, with the Green Deal, the interim target for 2030 has been raised significantly, especially for the buildings sector: The building sector is to save 60 percent of its CO2 emissions by 2030 compared to 2015. This means a significant tightening of the already very ambitious climate goal for the sector. Implementing this goal in less than ten years will be a tremendous challenge.

The biggest challenge will be to mobilise the necessary investment. The investment needed to reach the new 2030 target exceeds those of any other sector. The annual investment gap of 185 billion EUR is just appalling. To cover the immense investment needs, funds from all different funding sources – whether EU funds, national or private investment funds – must be pooled. The EU Commission should take on the task of coordinating the mobilisation of the funds.

The Federation of German Industries issues the following recommendations:

- **Prioritise mobilising investment** (pool and coordinate funding resources) to convincingly apply the “efficiency first”-principle for reducing the CO2-footprint of the buildings sector
  - **Make additional financial resources available for Member States** to implement their renovation strategies (giving support in proportion to performance)
  - **Further develop financing instruments** that help Member States in implementing their renovation strategies
  - improve the conditions for the **combinability of financial resources**
  - **Strengthen and expand investment activities of the EIB** to promote energy efficiency in the buildings sector
  - **Develop investment programmes with a business case approach** enabling companies to develop feasible business strategies in “energy efficient renovation as a (scaleable) product”
  - **Reduce complexity and administrative burden** in the application of funding programmes
- **Exercise restraint regarding the introduction of mandatory renovation requirements**
  - Mandatory renovation measures beyond those existing today should remain a last resort when all other available means have proven inappropriate. Information, advice, and in particular funding support should take precedence over the introduction of additional obligations
- **Create appropriate additional incentives for the use of renewable energies** in buildings
  - Possible obligatory requirements should ensure openness to technology and take profitability criteria and site specificities into account
- Apply **an integrated approach to building renovation** to boost the management of energy consumption, energy production and energy storage of buildings by implementing the new Smart Readiness Indicator
  - Promote the **seamless integration of digitalisation** in planning, construction and maintenance, such as Building Information Modelling
- Ensure **feasibility and coherence of political goals if examining requirements for recovery rates or sustainability aspects of construction products of building products**
  - In the case of requirements for construction products, ensure that technological and material openness are guaranteed and that cost aspects are taken into account
- **If introducing a European emissions trading system for the building sector,** opt for separate schemes considering the different abatement costs of different sectors
- **Include CO2-neutral energy sources also for the buildings sector:** Consider that – even when putting energy efficiency first – there will be residual needs for different kinds of carbon neutral, renewable energy sources in the building sector when further developing policy approaches
- Boost **know-how and the skills of workers** in the renovation sector, including training programs, for workers from sectors that are affected by the corona-pandemic and could switch to the building sector

7. Sustainable Mobility for all

Making mobility and logistics processes more climate- and resource-friendly while at the same time maintaining and strengthening the competitiveness of the European economy is of fundamental importance to German industry. Ambitious CO2 reduction targets can only be achieved in the transport sector if all available technical levers for climate-neutral mobility are used. It is therefore essential to reduce CO2 emissions in a technology-open and market-oriented manner.

Green Deal implementation must aim at utilising and optimising the combined strengths of the individual modes of transport.

This requires massive investments, such as the expansion of rail and inland waterway capacity, the upgrading of bridges and locks, intelligent traffic management systems and broadband mobile radio coverage along transport routes, as well as appropriate refuelling and charging infrastructure. An essential part must be an initiative for the market penetration of alternative drive systems and fuels (such as electromobility for new vehicles) and renewable fuels in the existing fleet as well as for air and maritime transport.

We recommend taking the following actions:

- Make use of the benefits of **each mode of transport** and strengthen **intermodality**
- Provide targeted **investment in all transport infrastructures**
- Provide **long-term support for R&D** for all modes of transport, in particular for intelligent technologies, services and solutions e. g. for alternative drives and fuels
- Make consistent use of the **digitisation potential** through a comprehensive concept and a definition of responsibilities notably with regard to the European Mobility Data Strategy, further promote research and development, invest in digital infrastructures, support standardisation processes and strengthen cross-border test fields and pilot projects
- Promote **connected and automated mobility** (intelligent traffic management systems, connected and automated driving on road and rail, MaaS)
- Set EU framework conditions for the efficient **market ramp-up of alternative drive systems and fuels** through consistent and technology-open incentives within the framework of the announced revisions such as the CO_2 fleet regulation, the Energy Tax Directive, Renewable Energy Directive II, the Eurovignette Directive or the Alternative Fuels Infrastructure Deployment Directive
- Promote **electric mobility (BEVs and PHEVs)** as well as **fuel cell mobility** and **synthetic fuels of non-biological origin** and advanced biofuels in particular by further funding charging and refuelling infrastructures, voluntary crediting of CO2-neutral fuels and of climate-neutral input materials in the CO_2 fleet regulation or granting tax exemptions of low CO2 and neutral fuels
- Recognise the **global nature of air and maritime transport:**
    - Avoid distortions of competition and address measures to achieve climate objectives in aviation **at ICAO level** and for maritime transport **at IMO level** rather than taking unilateral action at EU level
    - **Coordinated climate protection instruments in aviation,** such as EU ETS and CORSIA, to avoid international competitive distortions when applied - CORSIA should be the only climate protection instrument for international flights; any CO2 pricing in aviation that is not introduced on an international level for all air transport will have the negative consequences of distorting competition and causing carbon leakage – therefore, maintain free allocation of ETS allowances for the part of emissions subject to market distortion, such as feeder flights to hubs within the EEA
    - A **PtL blending quota in aviation** can be an effective instrument if sufficient quantities are available at competitive prices. Competition-distorting additional costs must be ruled out or compensated by appropriate measures in order to exclude distortions of competition to the detriment of European air transport locations and carbon leakage.
- Build new industrial alliances needed to achieve key EU policy objectives, such as **a European sustainable alternative fuels alliance** for the use in all modes of transport, especially for aviation, the maritime sector and heavy-duty transport

8. Realistic and achievable EU environmental law and a market driven Circular Economy

a. Realistic and achievable EU environmental law

Since the presentation of the European Green Deal, the Commission has presented a number of far-reaching environmental policy initiatives, in particular the Circular Economy Action Plan, the Biodiversity Strategy for 2030 and the Chemicals Strategy for Sustainability.

Further measures, such as the Zero Pollution Action Plan, the revision of the Industrial Emissions Directive and the Air Quality Directives are to follow. In the proposed measures so far, the ecological pillar of sustainability predominates in many places, to the detriment of the economic pillar and thus the aspect of the competitiveness of European industry. A current example is the chemicals strategy, where aspects, such as moving away from the risk-based approach in favour of a hazard-based approach or the "essential uses" approach can have significant negative effects on the innovation capacity of companies.

The measures announced in the Green Deal to improve the implementation/application of environmental law must now be addressed. Instead, mainly new targets have been defined or announced. Examples are the Zero Pollution Action Plan, the revision of the Air Quality Framework Directive and the IED, the Chemicals Strategy and the Biodiversity Strategy (extension of protected areas etc., restoration targets). This means enormous additional burden on businesses, especially during the Corona pandemic. In addition, there is also the danger that new targets are unrealistic and ultimately cannot be achieved. Expectations in European environmental policy could thus be disappointed. Ultimately, this is a question of the credibility of European policy. The EU needs to find the right balance between setting environmental targets and effective implementation and application of existing laws and rules. When setting targets, the EU must do so by predominantly taking into account technological and socio-economic developments. Often, a lack of success in European environmental protection is due to the fact that regulations are incorrectly or incompletely implemented into national law or are not correctly applied in practice. It is urgent that the Commission comes forward with initiatives for better implementation and application of environmental law.

For an EU environmental law that is realistic and achievable, we recommend to:

- Ensure **a balanced and realistic application of the three pillars of sustainability** when presenting environmental policy initiatives
- Set **realistic and achievable environmental targets and ensure an effective implementation and application of existing laws and rules**: urgently present initiatives for better implementation and application of EU environmental law.

b. A market-driven Circular Economy

In March 2020, the EU Commission has presented its new action plan for the circular economy. It comprises more than 40 individual measures which focus on the further development of waste management and a new sustainable product policy initiative.

The BDI supports the basic objectives of the EU Action Plan. A Circular Economy is the basis for sustainable economic activity and offers numerous opportunities for innovative business models. Developing functioning recycling and secondary raw material markets is key for achieving both environmental and climate objectives and to secure the supply of the European economy with raw materials.

To fully tap into these potentials, German industries suggests that the instruments proposed in the EU Action Plan take properly account of the ecological, economic and social sustainability dimensions.

The goal must be a mix of innovation-driven improvements for the circular economy and common standards for sustainable product design, a properly functioning waste market for the circular economy to develop bottom-up and to reward companies for circular innovation. This includes the expansion of recycling. In addition to existing recycling technologies, research and development of new processes and treatment options, such as chemical recycling or the direct use of CO2, must be advanced. Designing an overall coherent policy framework is essential for the circular economy and its important contribution to the realisation of the EU objective of reaching climate neutrality by 2050.

The upcoming legislative framework for a sustainable product policy is the centre piece of the Action Plan. It will need to clearly address conflicts between different environmental and other aspects: products must fulfil multiple functions and safety standards and at the same time meet ecological requirements (durability, reusability, recyclability). The initiative's main task is to meet or resolve conflicting goals.

For a market-driven Circular Economy, the Federation of German Industries recommends taking the following actions:

- **Develop functioning recycling and secondary raw material markets**, focusing on market-based instruments
- **Secure targeted support** to companies adapting to a sustainable product policy approach and developing recycling and secondary raw material markets through a tailored promotion and support framework
- Support **R&D in circular solutions throughout the life cycle, including new recycling processes**
- Identify and apply **effective instruments for handling substances of concern in waste and in recycled materials**
- **Effectively apply Waste Shipment rules,** allowing the free trade of recycled materials and products on world markets while achieving a high level of human health and environmental protection
- **Present a proposal to ban landfilling of untreated municipal waste as soon as possible**
- Carry out a **cost-benefit analysis of the so-called "SCIP" database established by Article 9 of the EU Waste Framework Directive**
- Apply **life cycle thinking** when developing product design measures

- **Improve and further develop methods for recording product-specific sustainability performance** (including Product Environmental Footprint, PEF): for example, Product Category Rules should be designed to be fully ISO-compliant
- Ensure clarity and legal certainty when applying **green public procurement criteria**
- Build **a global alliance** for the circular economy

9. Unlocking the benefits of digitalisation for decarbonisation

Harnessing the potentials of digitalisation and the EU data economy

Digitally enabled technologies have a transformational impact on the ability to meet the 2030 Agenda. The report "Digital with a purpose" by the Global Enabling Sustainability Initiative (GeSI) and Deloitte,

supported by the EIT Climate-KIC[1] reports that out of 169 SDG targets of the 17 UN-SDGs, 103 are directly influenced by digital technologies.

Analysis of 20 targets and their indicators across the SDGs shows that the expected deployment of existing digital technologies would, on average, help accelerate progress by 22 % and mitigate downward trends by 23 %. Digitally enabled technologies can, for example, help to:

- Better connect & communicate, create and empower new partnerships, information, ideas or business development opportunities.
- Better monitor and track performance so that interventions can be optimised, targeted and improved in real-time.
- Better and rapidly analyse data and consequently optimise processes, products, services, procedures, or productivity gains, or derive new business models from data analytics, AI, or blockchain applications.
- Better predict where interventions become necessary, automate systems or augment human abilities.

Digitally enabled technologies thus simultaneously advance environmental and economic ambition while create new, innovative jobs, generate overall well-being and living comfort. It is where environmental, economic and social goals can meet.

With respect to climate action, digitalisation is turning into an important catalyst, enabler and accelerator of a cost-efficient transition:

- In particular, the energy sector has been an early adopter of digital technologies: In the 1970s, power utilities were digital pioneers, using emerging technologies to facilitate grid management and operation. Oil and gas companies have long used digital technologies to improve decision making for exploration and production assets, including reservoirs and pipelines.
- As the technology advances and the energy systems itself becomes increasingly variable and decentralised due to the increased share of renewable energies, new challenges and opportunities arise throughout all sectors of the economy. From smart energy grids that ensure continuous grid stability and security of supply in an increasingly complex and volatile energy system, to modern building technology empowering consumers to self-generate, self-consume, trade or sell energy, to innovative energy and traffic management technologies or digital twins in industry, digitalisation offers forward-looking economic, environmental, and social opportunities that should be seized on the road towards climate neutrality.
- Digitalisation thus supports energy system integration – it can enable dynamic and interlinked flows of energy carriers, allow for more diverse markets to be connected with one another, and provide the necessary data to match supply and demand at a more disaggregated level and close to real time. A combination of novel sensors, advanced data exchange infrastructures, and data handling capabilities that make use of Big Data, Artificial Intelligence, 5G and distributed ledger technologies can enhance forecasting, allow the remote monitoring and management of distributed generation and improve asset optimisation, including the on-site use of self-generation. Digitalisation is also key to unleash the full potential of customers

[1] Study “Digital with a Purpose: Delivering a SMARTer 2030” available at https://gesi.org/research/download/36

having a flexible energy consumption across different sectors to contribute to the efficient integration of more renewables.

- Space and space-based applications are of central importance for the entire European industry. They are key to future technologies, such as autonomous driving, Internet of Things (IoT) and big data applications. Space is indispensable for climate protection and sustainability.

- Furthermore, a recent survey of almost 900 companies in industry and industry-related service providers carried out by the Institut der Deutschen Wirtschaft (DIW) on behalf of the Federal Ministry of Economics and Technology (BMWi)[2] confirms the positive correlation between digitalisation and resource efficiency: the higher the degree of digitalisation in a company, the higher the level of resource efficiency.

- The EU Environment Council also considers digitalisation is an excellent lever to accelerate the transition towards a climate-neutral, circular and more resilient economy stressing its potential to facilitate greenhouse gas emissions reduction across different sectors while enhancing adaptation to climate change, inter alia by boosting the EU's ability to predict and manage climate-related disasters. Through its Copernicus programme, the EU furthermore is to develop a "digital twin planet" to support global climate action.

With high performing data analytics and software applications, energy data spaces can make a decisive contribution to the development of new business models. Data spaces should in particular foster an ecosystem (of companies, civil society and individuals) creating new products and services based on more accessible data. Data-driven innovation will bring enormous benefits for customers and individual citizens, for example through improved personalised technology solutions or new mobility and energy management solutions.

In addition, the increasing volume of non-personal industrial data and public data in Europe, combined with technological change in how the data is stored and processed, will constitute a potential source of growth and innovation that should in our view be tapped. The volume of data produced in the world is growing rapidly, from 33 zettabytes in 2018 to an expected 175 zettabytes in 2025.

Each new wave of data represents major opportunities for the EU to become a world leader in this area. Furthermore, the way in which data is stored and processed will change dramatically over the coming 5 years. Today, 80 % of the processing and analysis of data takes place in data centres and centralised computing facilities, and 20 % in smart connected objects, such as cars, home appliances or manufacturing robots, and in computing facilities close to the user ('edge computing'). By 2025, these proportions are likely to be inverted. Data will also fuel the wide implementation of transformative practices, such as the use of digital twins in manufacturing and it provides flexibility and scalability of production.

The Federation of German Industries advocates for better harnessing the potentials of digitalisation and the data economy for the climate transition considering that accelerated digitisation not only pays off in terms of environmental and climate protection but also improves industries´ competitiveness.

At the same time, as the number of connected devices increases rapidly (from 27 billion devices in 2017 to an estimated number of 125 billion devices in 2030), cybersecurity and data privacy and data

[2] IW Study "Gutachten: Digitalisierung als Enabler für Ressourceneffizienz in Unternehmen" at https://www.iwkoeln.de/fileadmin/user_upload/Studien/Gutachten/PDF/2021/Ressourceneffizienz_4.0_Hauptbericht_final.pdf

protection issues need to be managed. The proven CE-marking and New Legislative Framework are in our view key tools next to the EU Cybersecurity Act in this respect.

Continuing to keep environmental impacts and benefits of digitalisation in checks and balance will no doubt matter, too. The current environmental footprint of the ICT sector is estimated to be between 5 to 9 % of the world's total electricity use and more than 2 % of all emissions, a large part of which is due to data centres, cloud services and connectivity. Overall, ICT-enabled technology is estimated to reduce considerably more greenhouse gas emissions than its own footprint generates.

Among the core recommendations to tap into these potentials, we cite the following:

- Speed up **investment in digital, energy and transport infrastructure** and particularly:
  - accelerate the roll-out of high-performance digital infrastructures, including 5G and future broadband networks.
  - accelerate investment in high-performance energy distribution grids.
  - set in place **a trustworthy, secure and cost-efficient data infrastructure** since data sharing will increasingly be done in the cloud and at the edge.
  - Make **Gaia-X** an EU-27 project to set in place a sustainable high-performance European cloud infrastructure. The European Alliance for Industrial Data and Cloud should leverage as much as possible the deliverables of GAIA-X. Duplication of activities between the Alliance and GAIA-X should be avoided.
- **Support the safe roll-out of trustworthy Artificial Intelligence**, in particular through taking a "risk-based" approach, particularly to allow the full benefits of AI to support manufacturing and machine-to-machine communications, sustainable mobility, healthcare, distributed energy systems, efficient building & construction and many other industrial technology areas but also to enable manufacturers to safely introduce this technology in their production processes.
- **Promote joint European space projects and strengthen innovative ideas** by further supporting more competitive approaches
- **Create incentives for the widespread application of digital technologies,** such as sectoral funding programmes
- Promote **cyber-resilience** and set **cybersecurity** (hardware and software) **standards**: push "security by design" of connected devices and set horizontal cybersecurity requirements based on the New Legislative Framework (NLF)
- Unlock **new business models through future EU data spaces:** The proposed **European Green Deal data space and EU energy data space** should facilitate the exchange of high value public datasets and private data while respecting EU rules for the protection of data and intellectual property rights; fair rules regarding access to data and data-sharing should be established by the new governance framework for European data spaces.
- **Distinguish B2B from B2C e-platforms** and persevere the functioning of the EU internal market for digitally enabled products
- Use the upcoming **Action Plan Digital for Energy** to foster the roll out of digital solutions, demand response and to ensure the interoperability of energy related data
- Update the **Network Codes on Demand Side Flexibility and Cybersecurity** to increase the resilience and cybersecurity aspects of cross-border electricity flows, grid stability and security of supply
- Establish **a Skills Agenda** for the Digital Age
- Continue to engage in **digital diplomacy** to providing adequate level of data protection also in other parts of the world
- Build **global consensus regarding tax challenges of digitalisation**

10. Building public acceptance

Implementing the new climate goals means a profound societal transformation of unprecedented scale that will largely depend on citizens and their willingness to change own behaviours and consumption patterns. The recently launched Climate Pact can help to raise awareness and support openness to change.

However, willingness to change also needs to translate into buying decisions that support industry´s investment in new technologies, products and services. Therefore, more needs to be done:

- **Lead an honest debate** about the necessary change of behaviour and consumption patterns and citizen´s willingness to change - build acceptance for innovative low carbon and breakthrough technologies
- **Provide incentives to citizens**, such as tax rebates for energy efficiency investments in buildings
- Extend **acceptance for industrial activities and infrastructures** and involve **industry as a partner** in building acceptance

Impressum

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