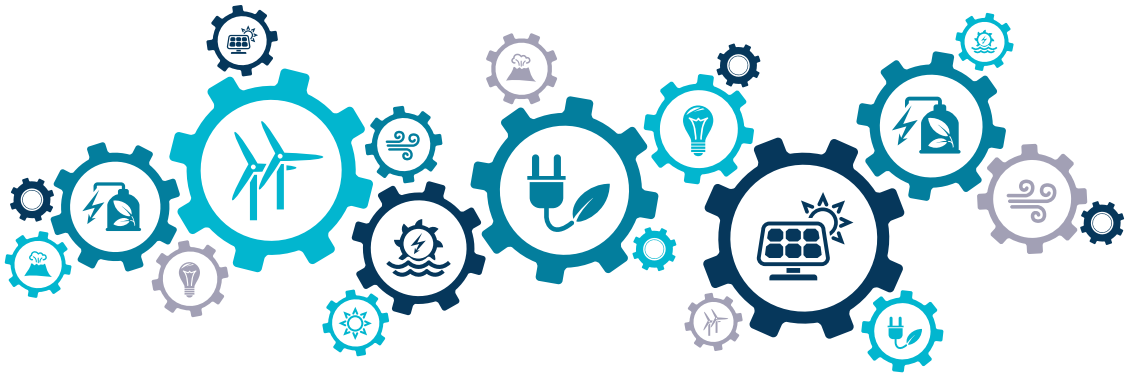
Restoring Europe.

The European Green Deal and the future of Europe

December 2019



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Unprecedented Challenges, Unprecedented Opportunities

Europe is facing an existential crisis.

We face challenges on all fronts: global conflict, trade, Brexit, health, immigration, the sustainability of our financial system and a lack of faith in politicians and the EU institutions. Cross-cutting all of these challenges, the climate and environment emergency not only poses a major threat to European way of life in and of itself, it accentuates and exaggerates the societal and political challenges we face as a continent.

Our ability to respond to climate change and demonstrate that well-regulated capitalism is capable of reducing emissions at the pace and scale required by the Paris Agreement will, in many ways, determine the future of Europe and our ability to restore faith in European democracy.

We cannot afford to fail. But alongside the huge responsibility we are faced with, we also have an incredible opportunity to reposition Europe on the global scene and to use the transformation of our industry and society to foster a better Europe.

To succeed, we need to act now and initiate an unprecedented transformation, "whatever it takes".

In her "Agenda for Europe" guidelines to the next Commission, President Ursula von der Leyen, recognizes the importance of the climate and environment emergency and proposes an all-encompassing European Green Deal as the vehicle for our political response .

At Bellona Europa, we share a common vision on the scale of the challenge at-hand and the opportunity that the European Green Deal presents as an overarching programme to help renew and revitalize the European economy. The European Green Deal needs to not only offer solutions to environmental crises, but it needs to do so in a manner that encourages an unprecedented level of inward investment in Europe, protects and creates jobs and offers hope to citizens and communities across Europe, including those regions most at risk of being left behind by the transition to a clean economy.

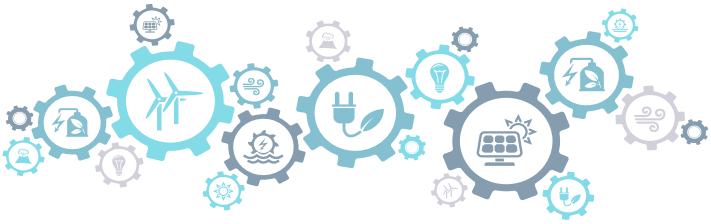
Bellona is deeply invested in the future of Europe and the importance of European leadership in tackling climate change on a global scale. The world's other major emitters – China, the US, Russia, Brazil, and more – each, in their own way, are now looking to Europe as a test case for just how serious the world is to tackling climate change and creating the global net zero economy of tomorrow.

In this vein, it is our responsibility to ensure that the European response to climate change and the European Green Deal are received positively and with optimism, in a way that stimulates action internationally. That is why we want to see three core principles at the heart of the European Green Deal:

1. A commitment to the unprecedented investment needed now in the infrastructure and technologies necessary for reaching net zero emissions before 2050;

2. A re-commitment to evidence-based policy making, and an ambition to continue striving for scientific excellence as the bedrock of our credibility on European climate action; and,

3. An understanding that markets alone cannot deliver emissions reductions at the pace and scale required and that Europe can and must do more to create the global net zero economy, including through a willingness to regulate across the economy, if necessary.



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Enabling Investment in Net Zero Infrastructure

Infrastructure investment needs to be the backbone of the European Green Deal. In particular, the availability of three crucial infrastructures - electricity grids and charging infrastructure, hydrogen and CO_2 networks - will play a major part in Europe's ability to move quickly to reduce emissions, enable inward investment, continue to grow within planetary boundaries and transition as justly and cost-effectively as possible.

Strategic infrastructure investments – whether they've been investments in roads, railways, broadband networks or investments in drains and sewers – have created the conditions in the past that have allowed European economies to grow and thrive. We now need to adopt a similar mindset as we face the daunting challenge of creating the infrastructures of tomorrow at an unprecedented scale, on an unprecedented timeline and at an unprecedented cost.

Clean energy networks (grids and hydrogen pipelines) and CO_2 transport and storage infrastructures will provide a much-needed competitive advantage to European businesses and industry in a global marketplace, creating jobs and enabling innovation across the economy.

Infrastructure investment supports value chain creation and can provide an economic stimulus far beyond the value derived directly from the infrastructure itself. We talk later about our ambition for Europe to become the largest market globally for low-carbon products – from renewable electricity through carbon-neutral steel and even carbon-negative cement – but this cannot happen without readily available and accessible infrastructure.

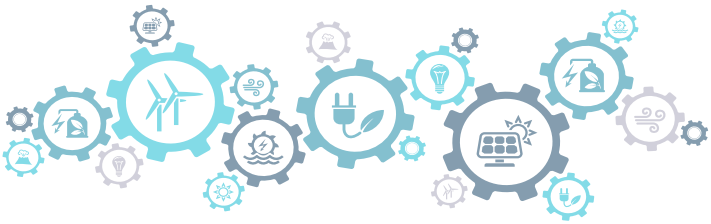
Renewable Electricity Infrastructure

Renewable electricity generation is the foundation of a modern, net zero emissions economy. Issues of intermittency and differing regional generation potentials makes the expansion of electricity grids and interconnectors an absolute imperative.

Electricity demand is expected to increase due to growing direct and indirect electrification across sectors, particularly for transport. Meanwhile, other energy intensive processes critical to the energy transition, such as the manufacture and recycling of batteries will require access to clean and affordable electricity in Europe. Ensuring sufficient renewables are available to meet this demand will require a far greater expansion of projects and infrastructure than we currently see. Overcoming issues of local resistance to renewable energy projects, for example, onshore wind, will require greater interconnection across EU member states and closer integration of markets.

Electrification where you least expect it

The substantial efficiency gains of switching to electric motors makes electricity a powerful tool to fuel the transformation of the transport sector. Not just in the obvious segments, like passenger vehicles and urban buses, but also in larger applications. For instance, using and electrifying barges in inland waterways offers a double benefit; shifting from roads to rivers and from combustion engines to electric motors. And this applies to other sectors where replacing the combustion engine could seem unthinkable. The past couple of years have seen the development of electric construction machinery, helping to alleviate noise and air pollution in cities, while reducing greenhouse gas emissions and demand-side consumption of energy. Aviation also has the potential to be electrified for shorthaul flights. We must encourage this innovation and to accommodate it we must ensure Europe does not get left behind in the battery industry. These sectors play a huge role in the European economy and electrification offers a viable and scalable solution for them to actively contribute towards Europe's green transformation.



Green Hydrogen and Hydrogen Networks

Hydrogen networks complement renewable electricity through energy storage opportunities, and can provide access to clean and renewable Hydrogen as a much-needed feedstock for high temperature heat generation, direct emissions reduction in energy intensive industries (EII) and as a fuel for transport segments which are difficult to directly electrify. In parts of Europe, where direct electrification of buildings and heat may not come as easily as in other regions, Hydrogen can play a crucial enabling and transitional role in reducing emissions from the heating sector. For transport, hydrogen will be necessary to fuel mobility for long distances – particularly in the maritime sector – where LNG has been falsely touted as a solution. Projects in e.g. the UK show that conversion of downstream gas infrastructure to hydrogen can enable rapid decarbonisation of heating and cooling in entire cities and regions.

Large-scale deployment of a European Gigawatt electrolysis capacity for H_2 production and a truly pan-European distribution network for green H_2 will enable the deployment of new renewable energy capacity and rapidly reduce the cost of Hydrogen production (electrolysis) below the equivalent cost of oil in less than a decade.

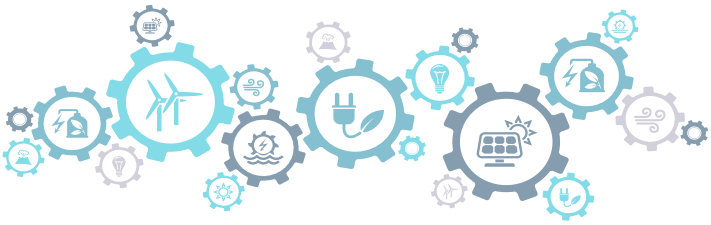
CO2 Transport and Storage Networks

Access to Carbon Capture and Storage (CCS) infrastructure is essential to the near- and medium-term future of Europe's EIIs, particularly in terms of tackling process emissions not related to the use of fossil fuels. Europe can overcome traditional challenges facing the deployment of CCS such as its costs and acceptance – both deriving from its links to the fossil economy – by leading a new charge on direct public investment in ownership of infrastructure and a new approach to regulation to ensure that polluters are forced to pay. Once large-scale investments in developing CO_2 storage and related transport networks materialise, industrial emitters will be able to have confidence in a real, cost-effective route to deep emission cuts, and investment in scaling up capture facilities will rapidly follow across all relevant industries.

The joint availability of these infrastructures will provide intelligent optionality and create technology-neutral opportunities across the economy, providing companies gain fair access to them. Few tasks could be more evidently European than ensuring that industrial sites all across Europe will have fair access to such decarbonisation infrastructure. Succeeding in this provision will be a major defining element for the EU's ability to achieve consensus on net zero emission targets for its industries.

To ensure each of these infrastructures is available on time will require strategic projects in the 2020s that provide initial demand and can be scaled to achieve maximum cost and abatement effectiveness. Measures like the Connecting Europe Facility and the Innovation Fund can help – but these policies alone will not deliver investment on the scales needed and therefore the EU should be looking to step-up and do more.

An interconnected pan-European network for renewable and low-carbon energy will enable reinvestment across Europe, North to South, and East to west. Regions formerly limited to local economies will be enables to become producers and exporters of renewable power, remote regions will have access to new sources of energy and new circular economy opportunities will be unlocked – all key steps on the journey to reindustrialized, clean and more equitable European society.



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A Better Science Base for Robust Policy Making

The credibility of Europe's climate response on the global stage, both as perceived by European citizens and as perceived by other nations, will be determined by our commitment to the best-available evidence and science.

We cannot afford to talk a good game on climate change at the same time as enabling (whether directly or indirectly) investments and policies that undermine our own objectives in the longer term. European investments in tackling climate change have to be fit for purpose, impactful and cost-effective.

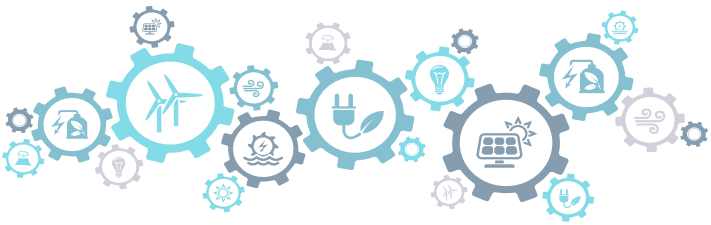
Each climate measure implemented today must be compatible with achieving net zero by 2050. This shouldn't be a high-level principle easily circumvented by ambiguity and misinformation. It should be a science-based, robust and stead-fast commitment to emissions reduction at the pace and scale required by the Paris Agreement.

Principles such as 'efficiency first' and 'no significant harm' are vital, but they must be supported by credible and cast-iron commitments in legislative and policy frameworks to ensure their implementation.

Whether it's relating to the Sustainable Finance Taxonomy – an instrument with immense potential for positive global impact and a powerful signal to investors and shareholders the world-over – or new and emerging policy areas such as negative emissions and how we account for net-negative CO_2 projects, we need to build confidence in our approach to policy-making rather than assume that the existing institutions and processes are infallible. We need to constantly strive to do better, as the challenges we face and the implications of our decisions are likely to grow greater by the day.

The European Green Deal will benefit from a clear and transparent rule book for technology and process climate assessment. This doesn't mean a one-size-fit-all approach to lifecycle analysis, it means a robust, technology- and sector- specific approach to policy development, guarding against greenwash and over-reliance on silver-bullet solutions.

In no area is this more important that in our approach to so-called "hard to decarbonise" sectors, where we cannot allow the imperative for political progress to undermine the technology choices that we as the European community make. We need a new approach to carbon accounting if we are to ensure that a Carbon Border Tax Adjustment is effective and impactful, and we need to ensure full lifecycle analysis of the climate impact of all projects eligible for EU funding.



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Better Science Means Better Policy - The Curious Case of CCU

Take Carbon Capture and Utilisation (CCU) and e-fuels as an example. Done correctly, CCU could be an important industrial policy measure, creating new opportunities for circular and carbon-neutral products. Done badly, however, and emissions will continue to make their way to the atmosphere, precious renewable energy will be used inefficiently and we will have set-back the energy transition by extending the life of technologies and infrastructures that should be consigned to the 20th century.

In the case of e-fuels for transport, the desire and political will to see some progress in tackling emissions from this 'hard to abate' sector may lead us to cut corners in ensuring policy is fit-for-purpose and permanent abatement of CO_2 emissions is taken seriously. For e-fuels to constitute genuine mitigation, we know three things:

1. The electricity (energy source for production) used needs to be 100% on-site renewable. Commission analysis shows the importance of temporal and geographic correlation between renewable energy production and consumption.

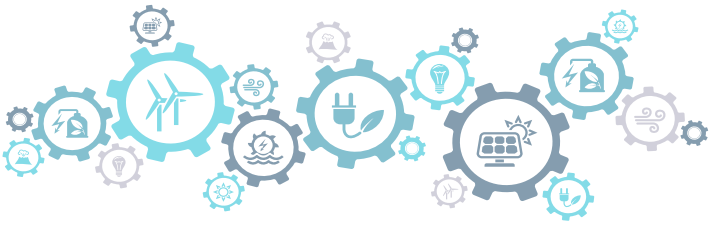
2. The Hydrogen used needs to be from electrolysis of water, again, powered 100% by renewable energy. There is no logic at all in reforming methane (natural gas) to produce hydrogen, simply to then create synthetic hydrocarbons through the addition of other CO_2, and yet there is a risk that EU policy could incentivise this.

3. The carbon source (CO_x) used needs to be either biogenic or from Direct Air Capture (DAC). Using industrial CO_2 as a feedstock for synthetic fuels doesn't solve a problem for industry, it simply transfers the liability for the CO_2 emissions from one sector to another, and allows both the emitter and the end user (transport) to claim some form of progress at the same time. This isn't a circular solution, it's fixing the books to pretend to solve a problem.

If policy frameworks are developed on the basis that all CCU is equal, and all CCU is good, then there is a genuine risk that e-fuel policy could disincentivise progress on emission reductions in both industry and transport, while wasting vast amounts of renewable electricity and taxpayers' money. The same risks we see for e-fuels also apply to what's increasingly being referred to as the new plastics economy.

There is no logic in using industrial CO_2 as a feedstock to produce new plastics if one of the greatest environmental challenges we face is from the proliferation of plastics in our natural habitats. We pretend to solve an industrial emissions problem by exacerbating another problem we face elsewhere. And when a significant proportion of plastics are single-use or have a lifetime of less than 2 years, locking up industrial CO_2 in plastics doesn't present a climate solution, it creates additional burdens on the policy makers, environmentalists and citizens of tomorrow.

We must pursue solutions in a rational and science-based manner, mindful of the medium term impacts, the links to other sectors and cautious of 'silver bullet' solutions being pursued for political rather evidence-based reasons.



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A Clean Internal Market

Market forces and the EU approach to market creation have had a fundamental role in shaping the thriving and innovative European economy that we live in today. But as we embark on a new era of crises, we need to change our approach to markets and accept that markets alone are unable to solve all the challenges we face today.

At a Member State level, trends are changing and governments are increasingly willing to adopt interventionist policies. The politicians of today are not averse to direct government investment and ownership of assets in the same way that previous generations were, and many are willing to embrace the power of regulation and well-regulated markets as part of the solution to the environmental and societal challenges we face.

The European Green Deal should embrace both the power and limitations of markets. Embracing the power of markets means actively pushing to create the world's largest market for low and zero emissions products, stimulating both public and private procurement; being mindful of the limitations of markets means not shying away from identifying failures and not being afraid of tough regulation and direct investment as antidotes, potentially alongside EU ownership of infrastructures and assets.

Dogma and ideology can only serve to harm us on the journey to a net zero economy and we must be willing to change and adapt our approach as we progress and as the scale and urgency of the challenge increases.

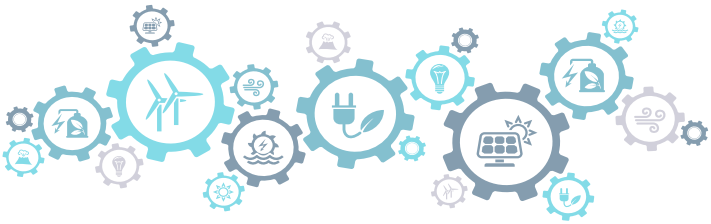
Driving the uptake of green products (whether at the individual, business or governmental level) and creating the world's largest Clean Internal Market requires policy frameworks that create both a market demand and benefits for clean industries (pull) and an increasing burden on polluters (push). The European Green Deal should encourage and support first movers in their pioneering effort while revoking the license to emit and therefore operate of others.

Creating near-term markets for first-mover low carbon products will help reinforce the case for EU investments (e.g in innovation) and the case for net zero infrastructure. Starting small but scaling-up quickly, the Clean Internal Market should offer a sufficient degree of certainty such that new technologies and process become bankable, attracting investment, driving initial infrastructure development and further encouraging innovation. One example would be public procurement standards, these would encourage investment in low carbon production whilst private markets grow, meeting a proportion of public procurement needs and generating an initial pull for first-movers.

A failure to create the initial markets may lead to European innovations being deployed and maturing outside of Europe.

An effective labelling system (as well as public procurement standards) needs to ensure the immediate incentivisation of fundamental and deep emission cuts, rather than following a linear reduction curve in sectors where solutions exist today. An incremental labelling scheme that lowers the threshold of what is considered 'low carbon' over time threatens to put products with zero emissions in direct competition with products that only offer minor emission reductions today, thereby disadvantaging first movers with novel breakthrough processes required for a net zero economy and delaying fundamental action.

To facilitate the transition towards cleaner production and consumption of energy, the taxation regime will need to be revisited. This review should sufficiently address the carbon intensity of the various fuels, while taking into consideration the way this energy is used. For instance, taxation must favour providing electricity to vessels docked in ports as opposed to favouring the combustion of fossil fuels to power on-board operations. This internalisation of the external impact of greenhouse gases will go a long way in achieving the behavioural changes that are required in order to move, live, and consume in a sustainable manner.



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Product Standards & Carbon Taxes

For the European Green Deal to truly have global impact, it needs to stimulate an international response – both in terms of competition and cooperation. Product standards, labelling and procurement as well as Border Carbon Adjustments (BCA) can play an important role in driving the uptake of low-carbon products while preventing carbon leakage.

The motivation behind a BCA needs to be clearly one of environmental and climate protection, and not one of economic protectionism nor coercion into climate action. If BCAs are viewed internationally as anti-competitive or incompatible with a globalised economy then governments are likely to recede towards protectionism and, subsequently, environmental standards may slip as a result of efforts to make domestic industries more competitive.

We have already seen climate policy and environmental standards become the subject of trade disputes, no more obviously than in the early discussions between the U.S. and the UK regarding a potential future Free Trade Agreement (FTA) where the U.S. President has reportedly required that any FTA make no mention of climate change. If this dogma takes hold and climate policy is politicised as a weapon in trade discussions we put at risk the much-needed actions to reduce emissions globally.

Finally, whilst BCAs have the potential to complement efforts to increase the effectiveness of the EU Emissions Trading System (ETS), they must be accompanied by the phase-out of free allowances as part of a new drive to ensure policy consistency and continuity throughout the EU. BCAs will require a functioning Monitoring and Verification mechanism to be put in place, such as scheme must be based on appropriate carbon accounting criteria to be efficient, robust and address the carbon leakage issue. This will require a step-change in the accounting systems of today and links in to the importance of a science- and evidence-based approach to policy making that we have discussed previously.

Conclusion: Whatever It Takes, The Time is Now

The European Green Deal offers an important restoration opportunity to the EU and its timing could not be more significant. Get this wrong and we risk further alienating European citizens from EU institutions, failing to address the climate and environmental emergency, losing jobs, a watching the health and wellbeing of European citizens and the European community deteriorate. Get this right and we have the potential to restore faith in the EU and the ability of well-regulated capitalism to respond to the multitude of challenges and crises we face.

Through the largest infrastructure investment programme Europe has ever seen, a re-commitment to the best-available science and evidence, and by creating the world's largest Clean Internal Market, the EU can put the EU on track to meeting its commitments under the Paris Agreement and leading the world towards a net zero economy. The prize is nothing less than the preservation and improvement of culture, the economy, the environment and life as we know it.

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Appendix - References and Recent Work

[CO_2 avoidance in the EU ETS Monitoring and Reporting Regulation]

December 2019

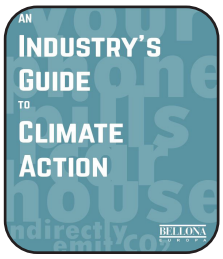
[Zero Emission Construction Sites: Status 2019]

October 2019

[Recycled Carbon Fuels in the Renewable Energy Directive]

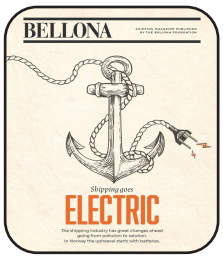
Joint Briefing Paperwith Zero Waste Europe

April 2019



[An Industry guide to Climate Action]

November 2018



[Shipping goes Electric]

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[The 'Power to Liquids' Trap]

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