AmCham EU
SPEAKING FOR AMERICAN BUSINESS IN EUROPE

Our position

Paving the way towards a low-carbon future

AmCham EU's recommendations for reducing greenhouse gas emissions

AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth-orientated business and investment climate in Europe. AmCham EU facilitates the resolution of transatlantic issues that impact business and plays a role in creating better understanding of EU and US positions on business matters. Aggregate US investment in Europe totalled more than €2 trillion in 2017, directly supports more than 4.7 million jobs in Europe, and generates billions of euros annually in income, trade and research and development.

American Chamber of Commerce to the European Union
Speaking for American business in Europe

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The American Chamber of Commerce to the EU (AmCham EU) represents forward-looking companies which acknowledge the need for an urgent action towards a low-carbon economy and are researching, investing and developing a wide range of low-carbon technologies in Europe. Such a paradigm shift can only happen with a global and holistic perspective. The EU took a leadership role, setting itself ambitious targets, and should use its position to leverage action, with its main global partners, to meet the Paris climate ambitions. Developing the 2050 strategy is clearly a challenging task which should start by ensuring that fundamental principles like technology-neutrality, predictability, transparency are encompassed in the existing and future regulatory framework, clarifying the objectives to achieve while identifying the key levers and barriers to remove.

The principles for a successful path towards a low carbon economy

In an open and competitive world, reducing greenhouse gas (GHG) emissions should be part of a broader framework which balances the objectives of sustainability, competitiveness and innovation. A long-term emissions reduction strategy must go hand in hand with a competitive and innovative industry in Europe, an industry able to invest in tomorrow's solutions to meet societal needs and consumer demands.

Low-carbon technologies are already expanding with unprecedented speed and strength, notably in the field of energy with, for example, total installed renewable energy capacity almost doubling over the past ten years[1]. Given the speed of technological innovation and how quickly competitive positions evolve, technology neutrality is the only way to allow innovation to thrive and for Europe to maintain a leading position. No technology path alone can respond to future needs. The long-term strategy should, therefore, rely on several pathways and key drivers for abatement, pointing at a direction of travel instead of a clearly defined road which may turn out to be a dead end.

Although unprecedented investments in clean technologies are mobilised, decisions to invest in a given technology and in a specific location are weighed up by companies globally. Europe is but one potential investment destination. Predictability and regulatory stability are and will be key to attract and secure the necessary investments in the EU, including in renewable energy projects which require high levels of certainty about future revenue streams. To efficiently support this effort funding mechanisms should be available at each project stage, up to the industrialisation phase, and selection criteria should not be based on predefined technological options to avoid lock-in and lock-out effects.

To date, there is still much uncertainty to what extent and in which timeframe it will be feasible to approach zero emissions by 2050, especially in the transport sector and some specific industrial sectors, notably in energy-intensive industries such as chemicals, steel etc. With 23% emissions reduction achieved between 1990 and 2016,[2] the EU has started on a trajectory towards this objective. However, with low-hanging fruits harvested, further reduction efforts may prove increasingly difficult and costly in the future. Robust analysis of the environmental, economic and social impacts of potential future scenarios is essential, taking into account the uncertainties and risks involved, to anticipate the consequences of future policy paths and inform stakeholders about the most effective solutions.

Living up to the ambition with clear signals and a proper direction

For years carbon taxes, emission and energy trading schemes have been implemented at national and European levels. Although carbon price is a powerful tool in curbing emissions, its effectiveness highly depends on how and at what level the price is set to incentivise industry to invest and consumers to alter their purchasing behaviour. The EU Emission Trading System (ETS), as a market-based mechanism, is an effective tool to reduce emissions at the lowest possible cost. However, as the regulatory framework becomes more complex, the risk of generating counter-effective measures grows: it has been estimated that a third of the carbon allowance over-supply in the EU ETS is a result of the implementation of the Energy Efficiency Directive[3]. The Governance

[1] IRENA, Insight on Renewables, installed capacity (marine, geothermal, bioenergy, solar,wind, hydropower) from 2007 to 2017

[2] European Commission

[3] I4CE – What role for the EU ETS in the 2030 climate and energy package? April 2017.

Regulation will be a first step in ensuring further policy consistency but the long-term strategy should bring a clear direction on the ambition and the external conditions to be met to ensure the scenarios feasibility. Some essential issues are to be addressed to ensure future policies meet their goals effectively:

- The ambition and form of long-term future goals need to be well defined, providing certainty about future investment prospects.
- It is essential to translate this ambition into a stable regulatory framework which drives progress in the years to come, while integrating measures to ensure that European industry is not put at a cost disadvantage to other global regions that would encourage carbon leakage (the displacement of businesses overseas).
- Realistic, robust and transparent impact assessment is essential, addressing all benefits and costs to fully weight the potential policy actions and inform stakeholders and citizens about their effects.
- It is also key to ensure that these measures do not impact the proper functioning of the Single Market.

The Commission has already demonstrated its willingness to engage in a dialogue with stakeholders. Designing the strategy should be an iterative process, with the ability to question the key features of the strategy, to truly build a common understanding and ownership. The Commission should, therefore, guarantee transparency by giving open access to scenarios, technological pathways and underlying assumptions.

Designing targeted policies to establish an enabling framework that fosters innovation

Implementing price signals and other regulatory tools will only be successful if investment in technologies is able to flow effectively. This requires targeted policies to remove barriers to potential solutions. A critical assessment of the remaining administrative and regulatory barriers to the extension of innovative technologies, both at EU and national levels, should be part of the 2050 Strategy. For instance, Corporate Power Purchasing Agreements (PPAs) allow corporate demand for renewable energy to thrive in the US, but in Europe businesses still face administrative hurdles and regulatory uncertainties to pursue PPAs.

Sector coupling will be necessary to provide reliable and cost-effective energy to all industries: the energy system has to be thought out in a holistic way. It must be reliable in a practical application, not just in theory. Electrification (in transport or heating sector) would increase the demand for power and would also depend on the current and future energy mix. Electricity provisions rely heavily on the use of transmission and distribution networks, increasing the power generation would require adaptations to the network. As an example, full electrification would mean an increase of 70% in Belgium of the electricity grid (FR 35%, DE 37%)[4].

Furthermore future approaches need to be fully integrated and holistic, for example, current CO_2 legislation for vehicles solely focuses on reducing emissions from new cars and vans. However, if we want to further reduce transport emissions, all stakeholders need to join forces for a 'comprehensive approach' that also looks at the impact of the use of vehicles on emissions. A holistic approach can reduce CO_2 emissions more effectively by using a wide range of solutions, whether this relates to the vehicle itself, alternative powertrains, faster fleet renewal, intelligent transport systems (ITS), improving infrastructure or altering driver behaviour and new technologies like automated driving.

The successful transition towards a sustainable low-carbon economy will also hinge on well-equipped and highly-skilled labour forces, which has to be anticipated today to meet tomorrow's needs. While education and the development of work-relevant skills should remain a task of the relevant institutions, businesses could make vital contributions by providing market insights and forecasts on future trends in skills. This would ensure that academic curricula stay relevant to the skills that are thought to meet market demands. Educational systems that put in place a formalised exchange between policy-makers, educators and businesses, have been successful in increasing the stock of future-relevant skills in their labour forces and ensuring the rapid employment of recent graduates.

[4] http://www.cerre.eu/

Annex

AmCham EU members would like to provide a few examples of technologies contributing to CO_2 emission reductions which are currently available or under development. This list is not meant to be exhaustive or prescriptive, but instead serve simply as an illustration of the wide range of possibilities for tomorrow's world.

Algae and other advanced biofuels

Algae can contribute to the future of transport. Algae can be cultivated on land unsuitable for other food production and even in industrial effluent water. They produce naturally lipids that can be turned into a renewable, lower carbon biofuel for transportation. The challenge is doing so economically and at scale, moving this technology from the petri dish to the fuel tank. Research is ongoing to identify and enhance algae strains capable of high lipid production while maintaining desirable growth rates. And because the manufacturing processes for algae biofuels and today's transportation fuels are similar, algae biofuels could eventually be processed in existing refineries to supplement supplies of conventional gasoline, diesel and other fuels. Finally, algae consume CO_2; therefore algae production sites could also be implemented to become a carbon capture project, increasing even more algae's role in addressing climate change risks.

Connected, Automated and Digitised Driving

The Automotive Industry is currently going through a tremendous change: with on the one side very challenging regulatory frameworks and on the other side fast changing technologies that will revolutionize future transport systems. Automated and connected vehicles, new mobility concepts, digitalisation, they will all play an important role to further reduce GHG emissions but also facilitate a truly integrated transport system where all modes will be connected. Not only GHG emissions will be reduced, but digitalisation will also enhance safety and open the path to intelligent production.

Carbon Capture and Storage (CCS)

CCS is the process by which carbon dioxide gas that would otherwise be released into the atmosphere is captured, compressed and injected into underground geologic formations for permanent storage. According to the IPCC, fossil fuel power plants and large industrial facilities account for as much as 60% of global carbon emissions. Thus, broad-based deployment of cost-effective carbon capture and storage has the potential to make a massive impact on the world's GHG levels. A novel technology under development would allow CO_2 capture through an application of carbonate fuel cells, which could substantially reduce costs and lead to a more economical pathway toward large-scale application globally.

Circular Steam Project

A pilot project developed in the Netherlands, the Circular Steam Project, incorporates an innovative technology into an existing production plant to convert the water-based waste into energy. The new installation will take the existing production process to a higher level of efficiency and sustainability, resulting in an overall annual reduction of ca. 140,000 metric tons CO_2 emissions, 0.9 Petajoule of energy and avoiding the release of 11.000 tonnes of salt residue into the surface water. A new bio-treatment plant and incinerator will be built, in which the production's waste will be treated and transformed into steam. The steam will be used as an energy source in the existing on-site production plant, thus making it a circular process. The project will allow achieving an annual CO_2 reduction equal to taking 31,000 cars off the road and will contribute to yearly energy savings equalling the electricity use of a city of 90,000 households.

Low Global Warming Potential Refrigerants

Eurotunnel upgraded its cooling system to low GWP (Global Warming Potential) refrigerants, saving 33% in energy use, since the new system began operating. In 2017, Eurotunnel saved 4.8 GWh and approximately €500,000, while reducing its overall carbon footprint by 9%. This technology enables customers to reduce their carbon footprint without sacrificing performance.

Solar and battery energy storage

A combination of solar energy and battery energy storage allows to produce dispatchable energy at a cost which is already competitive in markets where electricity prices are set by oil derivatives. A pilot project is under development in Hawaii with 2 facilities combining 47 MW of solar PV and 34 MW of 5-hour battery energy storage, sold under 25-year Power Purchase Agreements at an all-in price of 11 US cents/kWh. Those facilities are expected to become operational in 2018 and 2019. The solar+storage facilities will be able to provide peaking capacity during morning or evening peak periods (for example, from 5 to 9 pm), during times when solar output of the plant is not available. The plants will also be capable of providing firm capacity 24 hours a day at 20 to 30% of nameplate capacity of the solar plant.

Reducing GWP of the Electrical Power Sector

For decades, SF6 has been a dielectric medium commonly used in electrical power applications. However, SF6 also has an extremely high global warming potential at 23,500 times CO_2. New alternatives in the form of Dielectric Fluids have been developed in response to the global transition away from legacy chemistries that have global warming potentials such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF6). As advanced insulating and arc-quenching gases, these new Dielectric Fluids combine excellent dielectric performance and safety with desirable environmental properties. Greenhouse gas reductions of >98% are attainable using the new alternative fluids when compared with equipment applications using SF6. These versatile fluids can be used in a variety of applications to optimize performance and enable a wide operating temperature window, while maintaining a safe environment for workers. Dielectric Fluids are suitable for both medium and high voltage applications. They are non-flammable and non-ozone depleting.