EDF
ENVIRONMENTAL
DEFENSE FUND®
Finding the ways that work

FORGING SOLUTIONS IN EUROPE

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SUMMARY

Introducing EDF Europe

Carl Ferenbach with EDF President Fred Krupp

No single entity can do all that is needed to address today's urgent environmental problems—not the United States, not Europe, not the global business community, certainly not Environmental Defense Fund. But by working in partnership with many others, we can make a difference.

As we expand our platform in Europe, we have assessed what needs to be done to meet the most pressing challenges that cross national boundaries. We looked at how we are best positioned to help, based on the strengths we bring to the table and the good work others are doing. The result is this strategic plan, which shares our vision for the coming years and sets out our strategies and approaches. In working toward these goals, we will remain alert and flexible, responding to new scientific discoveries, technological innovations and social trends and pursuing important opportunities as they arise.

Please join us in building a better future.

Carl Ferenbach

Chair, Environmental Defense Fund Europe Board of Trustees

Strengthening the European Environmental Movement

"Environmental Defense Fund Europe will reach out to new audiences, unlock additional resources and deploy both tried and tested tools and innovative approaches"

We know we are stepping into a fast-moving river in Europe, where civil society has a proud history of winning environmental protections and where many progressive companies are investing in solutions and advocating positive change. By expanding Environmental Defense Fund's work in Europe, we will contribute to this common effort, bringing our experience in forging solutions that align the interests of people and nature so that both can thrive. It's what we call *finding the ways that work.*

Europe so often leads the world in safeguarding the environment and human health, from its major advances on climate to its protections for species and habitat and its ambitious standards for clean air, clean water, safer chemicals and greener products. Yet we still face many challenges. Tackling global climate change requires unprecedented action, our seas are still under great pressure, our land does not sustain the protective web of biodiversity and habitats it once did, and human health is still too often impaired due to poor environmental conditions.

To help deliver solutions on the scale of these problems, Environmental Defense Fund Europe will reach out to new audiences, unlock additional resources and deploy both tried and tested tools and innovative approaches, adding further diversity to the European environmental movement.

Baroness Worthington

Executive Director, Environmental Defense Fund Europe

WHO WE ARE

We are an affiliate organisation of Environmental Defense Fund (EDF) a leading international non-profit organisation that creates transformative solutions to the most serious environmental problems. Since 1967, EDF has used science, economics, law and innovative private-sector partnerships to bring a new voice for practical solutions. Hallmarks of Environmental Defense Fund Europe's approach include:

- **Working across the political spectrum**
- **Presenting a positive vision**
- **Investing in science and data analysis**
- **Using legal and economics expertise to design solutions**
- **Working with strategic partners across all sectors.**

"All around the world, people who care about protecting the environment can work together to share successful approaches and scale up the power of new solutions. Environmental Defense Fund's expansion in Europe strengthens our global network of partners spanning charities, business, academia and everyday people. We have so much to learn from one another."

Diane Regas
Executive Director, Environmental Defense Fund

Our approach to this plan

When assessing which issues to tackle and how best to deploy our resources we considered three key questions: Is there a market failure that prevents an issue being resolved? Is there also a regulatory failure that needs addressing? Does the problem lead to a solution that can be appropriately scaled?

We also considered if there is a role for us that plays to our strengths and complements the work of others. Applying these tests we have identified the issues we believe we can make a positive impact on in Europe, ranging across two key topics: Climate and Energy, and Oceans.

Global influencer

Our growth strategy in Europe draws on decades of experience on the ground in the US and China and increases the international impact of our work.

EDF's Blueprint 2020[1] outlined our vision on climate: avert catastrophic climate change by reducing emissions of climate pollutants, and help people and ecosystems build resilience and adapt to the warming that does occur. To achieve deeper and lasting reductions beyond 2020, we will work in targeted countries and sectors to help design policies and markets that harness the engines of prosperity toward delivering a stable climate.

CLIMATE & ENERGY

The importance of Europe

Europe may be a fluid concept but the countries that make up the European Union (EU), and its neighbours such as Norway and Switzerland, have been unambiguous leaders on climate change both at home and internationally. They have introduced comprehensive innovative policies and set legally enforceable goals. Emissions have been falling in many sectors as the economy grows, indicating a decoupling is now underway.

The EU is also the world's largest common market with a massive influence over patterns of consumption and trade. Early action in Europe has helped bring about steep cost reductions in clean energy technologies and European diplomatic efforts helped secure the UNFCCC's Paris Agreement in 2015. Being a leader can, however, have its disadvantages – the perception that the EU is going it alone, while other major economies take a less ambitious approach, still persists. There are fears about economic competitiveness and some claim that action on climate change is having a regressive impact on poorer countries and poorer households. Removing emissions from our entire energy systems still remains a huge challenge albeit an exciting one.

The following pages lay out in more details the areas where Environmental Defense Fund Europe can achieve quick wins and have immediate impact in Europe.

ENERGY SECTOR TRANSITION

Goal

Accelerate the rate of adoption of clean energy innovations through international collaboration, focusing on the integration of renewables, the introduction of supportive electricity market regulations and business models, and increasing investor confidence.

Context

We are witnessing exciting and important innovation in clean energy in the US, Europe and in China. Falling costs, increasing concerns about climate change and air quality, and the development of global markets for clean solutions is driving change deep into the heart of the energy sector, with new business models appearing, new regulatory frameworks emerging and confidence among investors increasing. However, innovations need to scale more quickly to turn the corner on climate change.

We see an opportunity to accelerate the pace of change by leveraging the power of investors, technology companies and policy entrepreneurs on both sides of the Atlantic and in China. As a first step, we need to expand and deepen our relationships in Europe and begin to build a collaborative strategy with Europe-based partners to jointly accelerate the investment and policy innovation needed to deliver on the promise of energy efficiency and transform the electricity systems.

Strategies

Collaboration

Create opportunities to accelerate transition to zero carbon electricity and electrification, through timely convening, best-practice sharing, and an initial slate of collaborative research.

Advocacy

Undertake targeted advocacy timed to effect key decisions in key jurisdictions.

Investors

Build on our successful Investor Confidence Project and help catalyse the €60-100bn/year European market for efficiency investment needed to meet European climate goals.

Our Approach

Knowledge Sharing

Change in the European energy sector is happening due to a combination of top down policies and bottom up development of new technologies and practices in nation states, regions and cities. The availability of finance is facilitating deployment at all scales. Fully decarbonising energy cost effectively, while maintaining security of supply, is a big challenge, but many of the issues facing policy makers and companies are common across the globe. We will convene a programme of high-level round tables involving decision makers and stakeholders to explore and promote best practice from around the world.

Grid Optimisation

'Smart' technologies and infrastructure, coupled with machine learning, can help smooth the transition by better matching sources of demand with supply, helping to increase the overall efficiency of the shift to a zero emissions system. By researching the effectiveness of different approaches on both sides of the Atlantic, and communicating our findings, we will help to speed the adoption of grid optimisation tools.

Electrification

We will work to increase the pace and efficiency of efforts to decarbonise the European energy system by influencing the implementation of climate and energy policy development at both a European and Member State level, with a particular focus on the role of electrification in sectors such as transport. We will work with partners, commission research and undertake targeted advocacy to influence the shape of new regulations and policies.

Investment

EDF has a long track record of engaging with companies and the financial sector to facilitate investment in clean energy solutions. The Investor Confidence Project helped to standardise buildings energy efficiency investment and has now been taken up by a certification delivery body to mainstream the protocols we developed. We will continue to seek out innovative ways to leverage our financial sector networks, unlocking more investment in clean energy solutions.

Focus on law

EDF was formed by a group of scientists joining forces with an attorney to ban the spraying of DDT on North American wetlands. We've maintained a team of lawyers on our staff ever since, such as senior attorney **Michael Panfil** whose areas of expertise include energy markets; smart grid; demand response; energy storage; time variant pricing; and energy resiliency.

Michael works in the US to support federal, state, and regulatory efforts to design a cleaner, economic, and efficient electricity system and also tracks efforts to boost clean energy systems in other parts of the world including Europe. Before joining EDF Michael's previous engagements include advocating for demand response, smart grid technologies, and time-variant pricing in California and New York.

What others are doing in this area

In the NGO sector, Germany-based independent Think Tank Agora Verkehrswende, an initiative from Stiftung Mercator and European Climate Foundation, convenes a high-level platform made up of decision makers and stakeholders. Their focus is on how to decarbonise transport in Germany by 2050.

In the business sector the AI company DeepMind, part of Alphabet and based in London, has demonstrated that machine learning can bring significant efficiencies in data centre power usage. The company is now exploring the potential to apply similar techniques to the UK's electricity grid to help save money and carbon.

CARBON PRICING

Goal

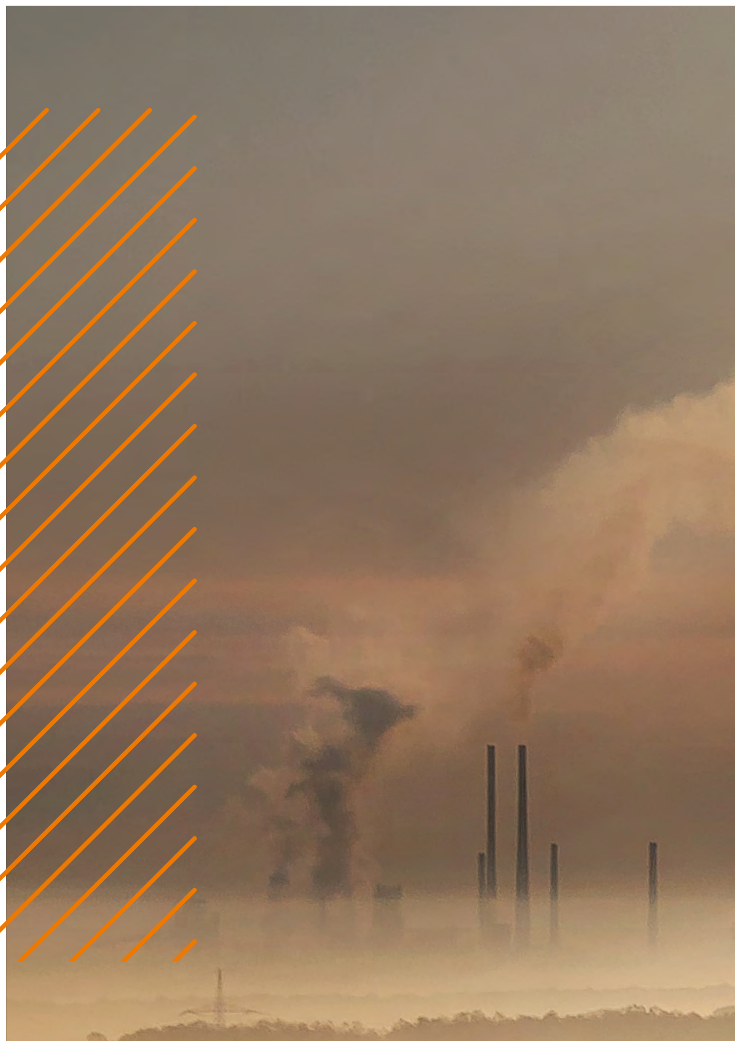
Promote increased use of carbon pricing to encourage Europe to set more ambitious emission targets, and to help bend the curve in global emissions more quickly.

Context

Capping greenhouse gas emissions with declining legal limits is a clear way of guaranteeing action. A key overarching objective in EDF's 2020 Blueprint is that *"By 2020, one quarter of the world's carbon dioxide emissions are covered by durable, declining limits achieved with a carbon price, on track to having one half of emissions covered by 2030".*

Europe is the third largest global emitter after China and the US and has been at the forefront of imposing legally binding caps on emissions.

The EU's "2050 low-carbon roadmap" (2011) set out a greenhouse gas emission reduction trajectory of 40% emissions cuts by 2030, 60% by 2040, and 80%



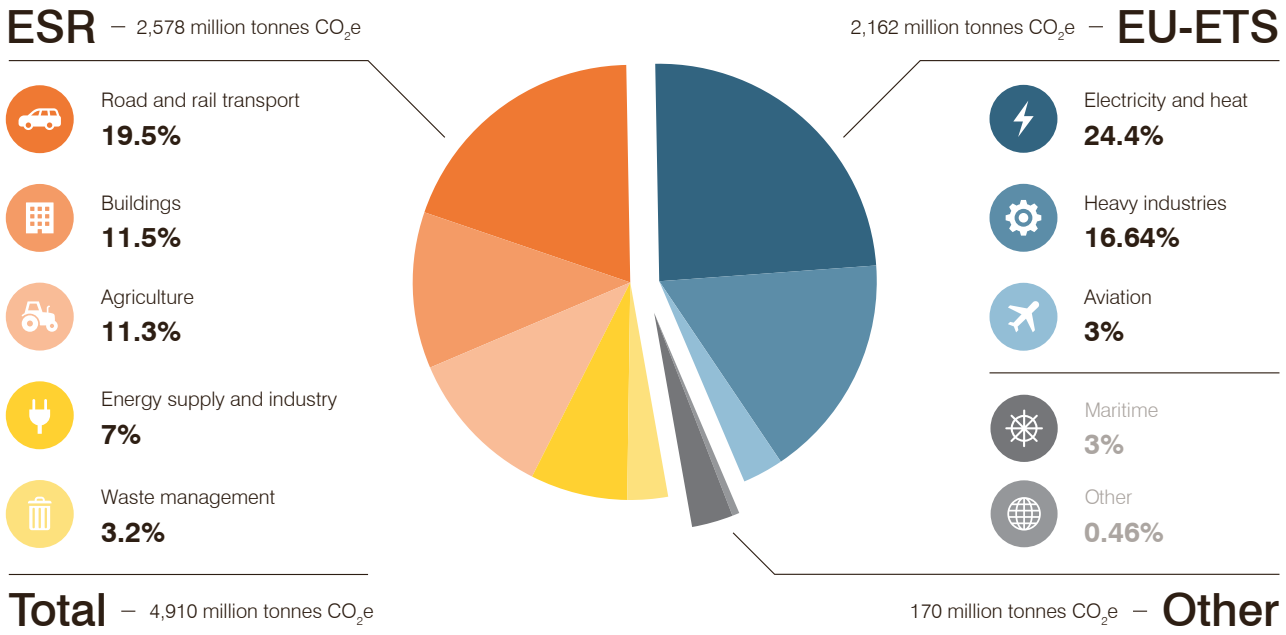
by 2050 (all below 1990 levels). To achieve these targets the EU caps all sectors' emissions but has two separate policies for implementation:

- The EU Emissions Trading Scheme (EU-ETS)[2] is the world's largest carbon market covering around two billion tonnes of emissions per annum (or around 45% of the EU's greenhouse gas emissions) and regulating over 11,000 installations (power stations, manufacturing plants) and airlines.

- The Effort Sharing Regulation (ESR) establishes binding annual greenhouse gas emission targets for most sectors not included in the EU-ETS such as transport, buildings, agriculture and waste[3]. Unlike the EU-ETS, which is regulated at EU level, for these non-trading sectors it is up to Member States to implement national carbon pricing policies.

Emissions have been falling in the EU-ETS sectors, partly because underlying economic growth forecasts have not been met and the carbon intensity of power generation has been falling. Air quality regulations, UK carbon prices, increased deployment of renewables and increasing energy efficiency mean coal plants are running less. Emissions are more stagnant under the ESR. Concerns about an inability to continue reducing emissions coupled with fears about the impact of costs on global competitiveness are holding back increased European ambition. However, with the signing of the Paris Agreement and falling prices in clean technologies, European countries can meet and even exceed emissions reduction targets.

We can play an important role helping ensure Europe stays on course with ambitious yet pragmatic climate policies. Now is the perfect time to explore the benefits of market-based approaches in non-traded sectors, including international shipping, helping to build confidence that overall targets can not only be met but even exceeded. At the same time, Brexit raises the possibility of a re-evaluation of the UK's role in European and global carbon markets.



There are two main pillars of the EU's climate mitigation policies: the Emission Trading System (EU-ETS) and the Effort Sharing Regulation (ESR). The EU-ETS is a cap-and-trade system covering emissions from energy production, heavy industries and aviation. These sectors account for about 45% of the EU's emissions. The EU-ETS covers the 28 EU members plus Iceland, Lichtenstein and Norway. The ESR on the other hand covers emissions from transport, buildings, waste and agriculture. It is based on a principle of shared effort among Member States.

Focus on economics

Since the 1970s, economics has been playing a central role in EDF solutions. In 1990, our economist **Daniel Dudek** helped to create the groundbreaking sulfur dioxide market that dramatically reduced acid rain at just a fraction of the expected cost. This success so impressed officials in China that Dudek was invited to advise the Chinese government on economic incentives for pollution control. EDF opened its office in Beijing shortly thereafter. Now we are helping to implement China's carbon market. EDF's Economics Advisory Council brings together some of the world's leading economic thinkers, as we continue to design market-based solutions ranging from catch shares for fisheries to habitat exchanges for wildlife.

What others are doing in this area

The not-for-profit Sandbag Climate Campaign analyses the EU Emissions Trading Scheme's compliance data, coupled with other sources, to shine a spotlight on how the scheme is performing and to inform a programme of advocacy to improve the policy design.

In the business sector the International Emissions Trading Association (IETA) represents a range of companies, many of whom are participants in emissions trading schemes, to extend the coverage of such schemes and promote best practice.

Strategies

International

Build and leverage Europe's support for the introduction of effective carbon pricing policies in the global transport sectors of aviation and shipping that currently sit outside the Paris Agreement.

Europe

Advocate increased use of cost effective policies such as emissions trading and carbon pricing to reach national emission targets in order to galvanise more ambition.

UK

Influence policy development arising from the UK's likely departure from the EU, exploring any opportunities to maximise global emissions reductions and forge new international carbon market links.

Our Approach

Global Transport

Paris Agreement signatories set out agreed national emission targets in Nationally Determined Contributions (NDCs), but these exclude emissions from the global aviation and shipping sectors. However, aviation and shipping both have large emission footprints (aviation and shipping are estimated to each account for over 2% of global GHG emissions)[4] and are among the fastest-growing sources of greenhouse gas emissions. In 2016 the International Civil Aviation Organization (ICAO) agreed to use a global market-based measure to address CO_2 emissions from international aviation and Environmental Defense Fund Europe will continue to advocate for environmental integrity in the implementation of its Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)[5]. For shipping, looming new emissions reporting requirements and the threat of being included as a sector in the EU-ETS have started a growing momentum for the adoption of a sectoral greenhouse gas reduction target and policies to meet it.

We will advocate for a comprehensive carbon pricing policy in shipping, leveraging Europe's position as a global shipping hub and its support for climate action. We will identify first movers amongst countries and shipping companies, build coalitions with other European NGOs for scale of advocacy, and aim to position ourselves as a go to advisor to the International Maritime Organisation (IMO) in London due to our unique position as an NGO known for working with industry, and with carbon pricing experts in the US, China, Latin America and Europe.

Galvanising more use of trading to bolster ambition

Reform of both the EU Emissions Trading System and the EU's Effort Sharing Regulations (ESR) for the period 2020-2030 is underway but not yet finalised. Targets are becoming more challenging and countries are seeking reassurances that these can be met without excessive cost. Markets in emissions reductions help to guarantee that outcome. Under the EU-ETS, action is needed to restore the tension between emissions and the cap. Supporting deep decarbonisation strategies in industries covered by the cap is key to this. In the ESR new rules under development include flexibilities such as borrowing allowances from future periods, despite the fact well designed policies could uncover low cost emissions reductions now. Although individual countries will be able to trade between themselves, there is currently little civil society or private sector involvement in the intra-State market. This is despite the fact that Kyoto's Joint Implementation mechanism provided a precursor for a more dynamic market.

We will work to improve the effectiveness of the EU-ETS with timely interventions based on analysis of how the system is performing to date and drawing on experiences of best practice from around the world. We will also increase awareness of, and boost demand for, more effective market-based policies in the sectors outside the current cap and seek to galvanise a club of Member States committed to developing markets in low cost abatement so that overall ambition can be increased.

UK carbon market post-Brexit

The UK's likely departure from the European Union presents both challenges and opportunities for the UK, the EU and the global carbon market, as the UK is the EU-ETS' second biggest participant by volume.

We will commission research and work with partners to assess the impact of different options (including staying in the EU-ETS) for the UK carbon market, and advocate for the options most likely to maximise global environmental benefits.

LIMIT NEAR-TERM WARMING

Goal

Win stronger commitments among countries and companies in Europe to quantify, report and reduce methane emissions from the oil and gas industry consistent with achieving the global reduction goal of 45% by 2025.

Context

Methane is more than 80 times more potent than CO_2 over a 20-year timeframe and responsible for around one-quarter of the warming our planet is experiencing now. Because the science is comparatively recent, efforts to address methane in the short term do not yet match the important work already being done to limit CO_2 emissions. The global oil and gas industry causes approximately one-quarter of methane pollution, with emissions projected to increase, and yet it presents the best opportunities for low-cost solutions.

EDF's ambitious goal is to achieve a 45% cut in global methane pollution by 2025, which will cut the temperatures we will see over the next 20 years by the same amount as closing one third of the world's coal fired power plants.

EDF has launched the first phase of this global strategy in North America, catalysing ground-breaking scientific studies to illuminate the scope of the problem and then helped secure significant methane reduction pledges from Canada, Mexico, and the US - at both the state and Federal level. Now EDF is turning its attention to other regions of the world.

As a first step, to gather better data globally on oil and gas methane emissions EDF has launched a series of international methane studies with the Climate and Clean Air Coalition, an international partnership bringing together governments and civil society, and the Oil and Gas Climate Initiative (OGCI), a CEO-led coalition of 10 oil and gas companies representing over 20% of global oil and gas production, including six European companies (BP, Eni, Repsol, Shell, Statoil, and Total).

Europe, home to both these globally leading oil and gas companies and many of the world's most influential scientific research organisations, must play a significant role. And as a major consumer of natural gas, Europe presents an opportunity to reduce emissions in the near-term within its borders and leverage its influence as a major gas purchaser to demand better practices from the countries in which gas is produced.

Strategies

Science

Continue breaking new ground on the identification and quantification of methane leaks in Europe and globally by launching partnerships and projects with European-based research organisations and companies.

Industry

Work with European transnational oil and gas companies to instil leading practices for measuring, reporting, and reducing leaks throughout their global operations; and to socialise these practices with the national oil companies, with whom they do business.

Investors

Educate and mobilise Europe-based international investors so that they send a market signal to oil and gas companies to prioritise cost-effective leak reductions.

Policy

Embed methane into European climate agendas and build consensus around a shared global “45% by 2025” reduction goal.

Focus on Innovation

In 2014 **Ben Ratner** and the EDF team launched the Methane Detectors Challenge (MDC) in the US. This is a groundbreaking partnership with oil and gas companies, technology developers and other experts aiming to develop innovative technologies enabling oil and gas companies to detect and fix methane leaks in real time across the supply chain.

The MDC received 20 proposals from industry and universities across 4 continents and following reviews 2 were selected for pilot deployment. Partners in the utilities and oil and gas industries, including PG&E and Statoil, are moving to purchase and deploy the top performing sensor systems across a range of geographies and facilities. Our aim is to spur further collaborative projects in Europe and wherever European companies are involved in the production or transport of natural gas.

What others are doing in this area

EDF worked with Principles for Responsible Investment (PRI) to develop the Investors Guide to Methane. Following its release in late 2016, PRI recently announced a collaborative oil and gas company engagement initiative that includes 35 investors from 11 countries representing $3.8 trillion in assets. Investors will use the Guide to push companies to better measure, report and reduce emissions.

The Oil and Gas Methane Partnership (OGMP) is a voluntary initiative to reduce methane emissions in the oil and gas sector, currently with 10 partner companies comprising about 10% of global oi and gas production. OGMP, members agree to: survey methane emissions at key sources, evaluate cost-effective technology options to address uncontrolled sources; and report progress on surveys and reductions on an annual basis.

Our Approach

Mobilise scientists

EDF-coordinated research has advanced cutting-edge science (32 peer-reviewed scientific papers from 40 research institutions in the past four years), catalysing a new understanding of methane's role in climate change within North America. Now we are engaging with the European research community - including the Netherlands Organization for Applied Scientific Research (TNO) and the National Physics Laboratory (UK) - to conduct on-the-ground research studies, focused on methane emissions outside North America. We recently concluded our first field study with TNO in the Groningen gas field in the Netherlands, the EU's largest gas field. Additionally, we are developing a partnership with key scientists and experts at the World Meteorological Organization (WMO) as we advance our work on a methane research agenda in Europe.

Drive global change through European oil and gas companies

European-headquartered companies are among the top industry players in the world, including four of the world's six integrated "supermajors". These companies not only have influence over their own global operations, but they are known for setting operating standards that have broader influence among the global industry. Our strategy is to partner with industry leaders to pursue solutions that make sound methane management the new leading practice. One such example of this is our collaboration with the UN Climate & Clean Air Coalition's Oil & Gas Methane Partnership, which provides a credible mechanism for companies to systematically and responsibly address their methane emissions. We will also expand our focus to the midstream and downstream sectors, which can be a significant source of methane emissions. We will analyse the unique business and regulatory models that affect the incentives to find, fix and prevent leaks on national/transnational pipelines and urban distribution systems and develop a targeted plan, building on our successful work with gas utilities in the United States.

Harness the power of investors

As a vital centre of global finance, Europe presents an opportunity to collaborate with the investment community. Investors are uniquely positioned to make a rapid difference, as they possess the incentive to reduce reputational and financial risk and the influence to change industry behaviour. We will work with leading global investors to help redirect capital to strong performers, and support methane public policy. This effort was kicked off last year through the release of the Investors Guide to Methane, issued with the Principals of Responsible Investment (PRI), (see insert).

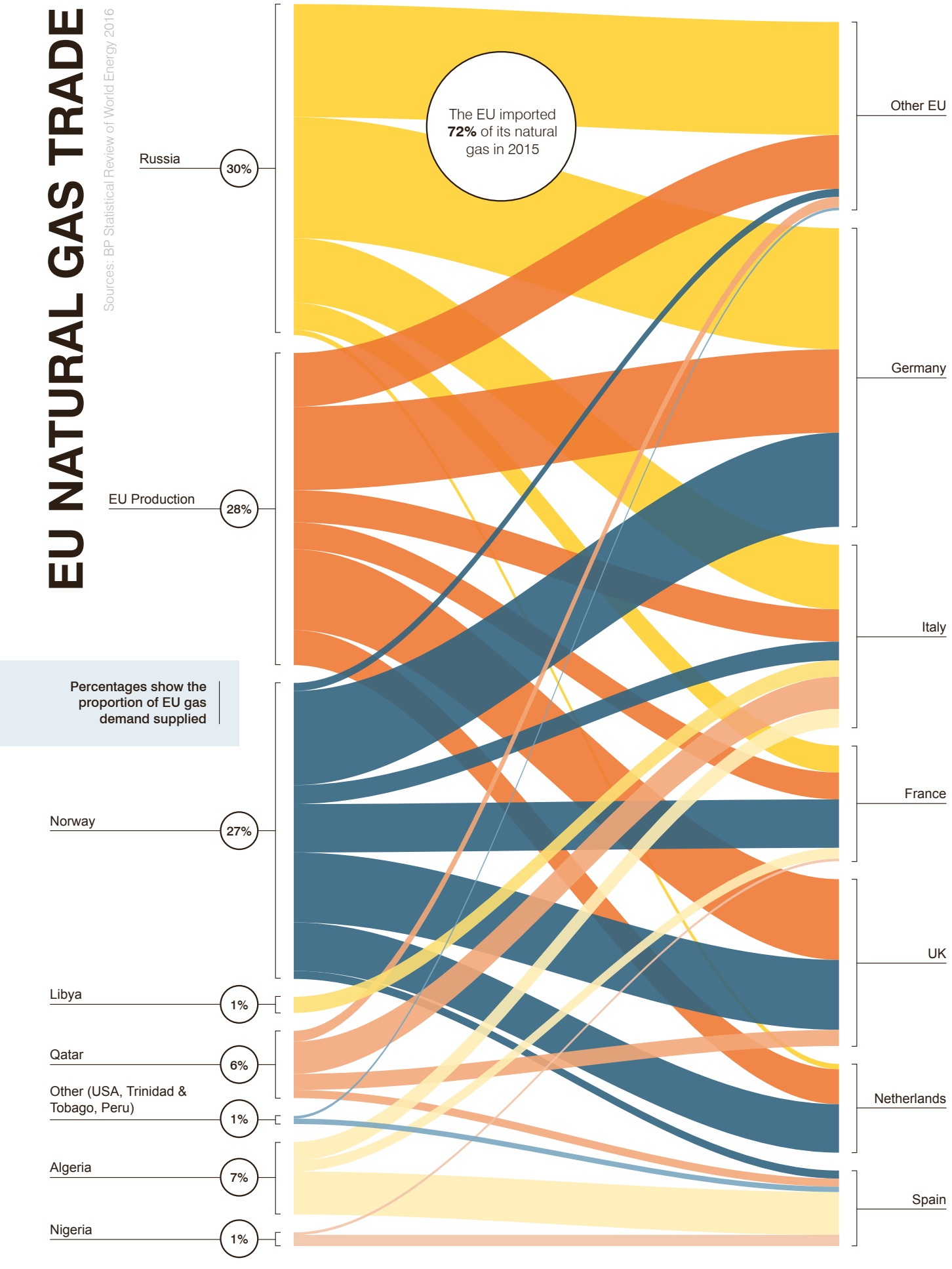
Build political support

While Europe has robust, globally-leading environmental and climate policies, they are largely focused on reducing carbon dioxide emissions and do not yet focus on methane as a key short-term climate forcer. European regulations can be instrumental in shaping standards worldwide. Working closely with in-country partners, our campaign will embed methane in the climate agendas of key European countries. We have already gained momentum by helping to secure a joint statement at the U.S.-Nordic Leader Summit last year, including a commitment from six countries (the U.S., Denmark, Finland, Iceland, Norway and Sweden). Moving forward, a critical ingredient for success across Europe will be leveraging the public's concern over climate change to stimulate change in Europe's oil and gas methane policies. We seek to increase public awareness of methane risks to generate public support for a European methane strategy that includes strong action on oil and gas. We have already gained some traction on this front in the Netherlands, where we are working to raise the profile of methane through targeted outreach in parallel to our field study of the Groningen gas field.

***As our infographic on the following page shows** the EU produces less than a third of the natural gas it consumes, with the remainder being imported. Russia and Norway provide the bulk of imports but there is a growing market in LNG from a range of countries. In addition to addressing methane issues at home, as a consumer of 11% of the global supply of gas, the EU can potentially have a far reaching influence on regulation of the global gas industry.*

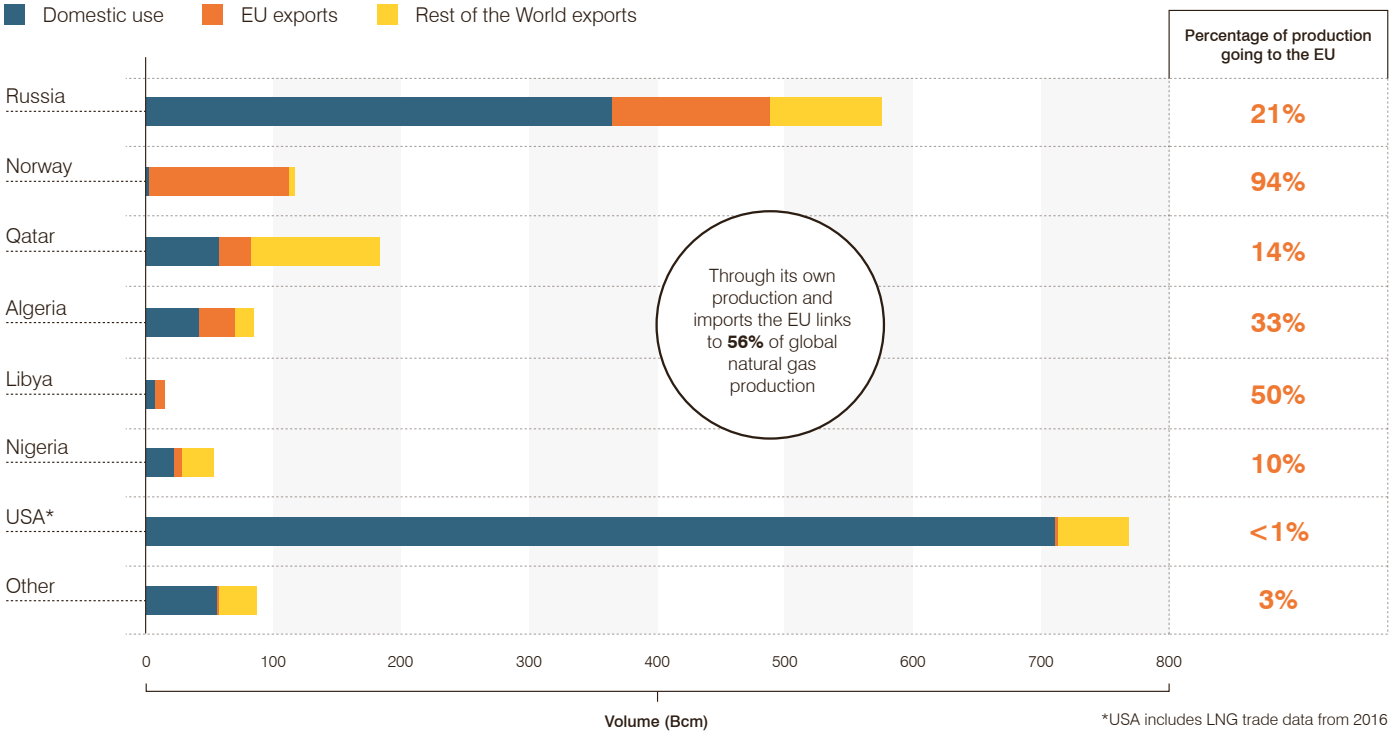
EU NATURAL GAS TRADE

Sources: BP Statistical Review of World Energy 2016



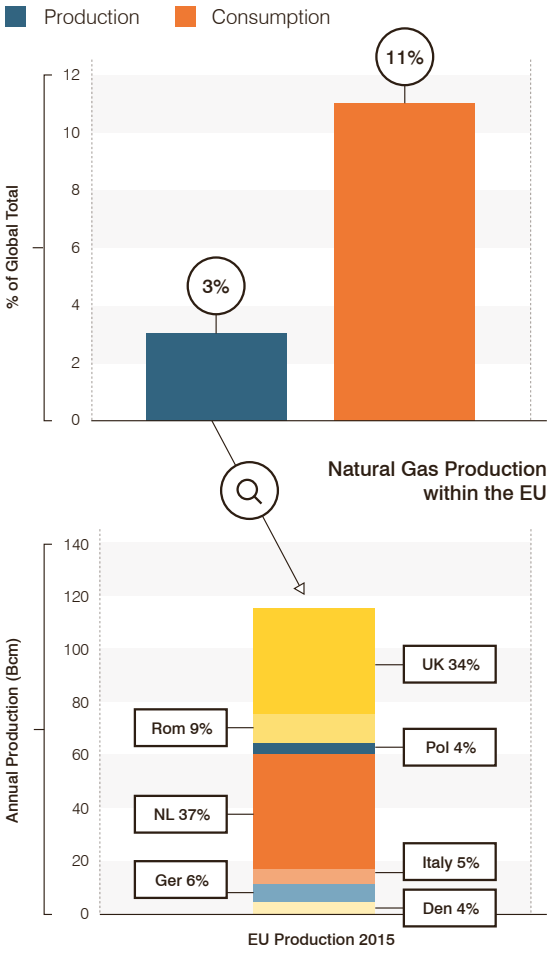
2015 Production and Destination of Natural Gas for Countries Exporting to the EU

Source: BP Statistical Review of World Energy 2016



*USA includes LNG trade data from 2016

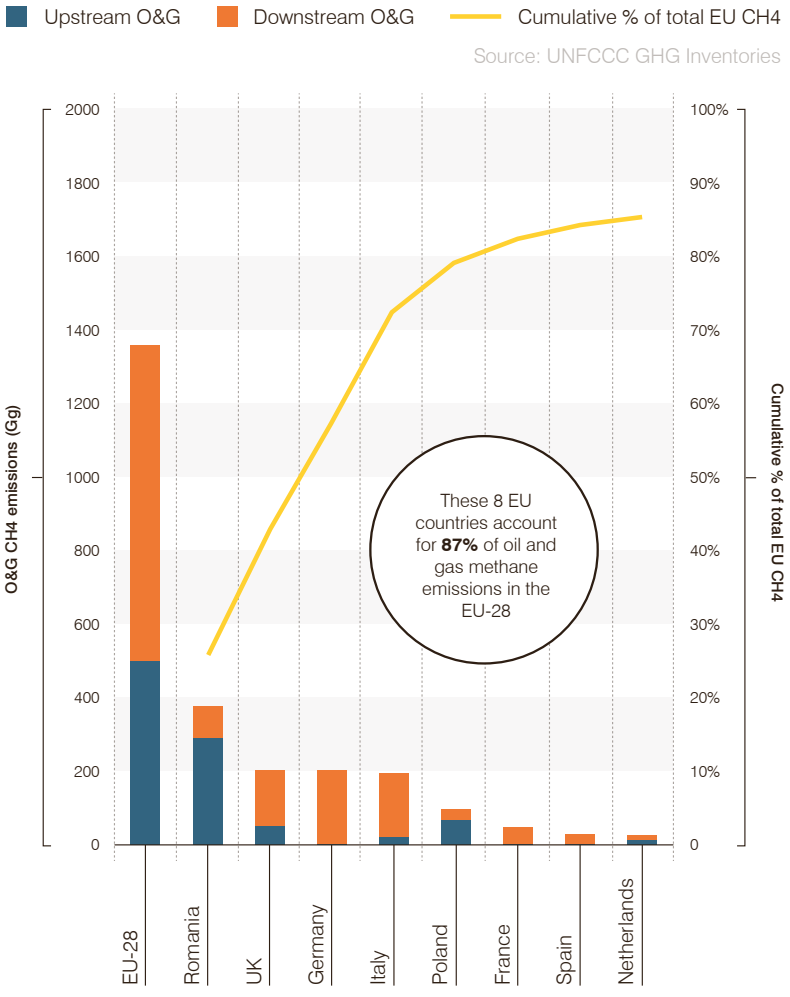
EU Global Gas Production and Consumption 2015



Source: BP Statistical Review of World Energy 2016

EU Reported Oil and Gas Methane Emissions 2015

Source: UNFCCC GHG Inventories



OCEANS

EDF's Blueprint 2020 outlined our vision on oceans: in our lifetimes, recover the world's wild fisheries so that we have more fish, more food and more prosperity. And specifically, by 2020, be on track toward having 50% more fish in the sea by 2025 compared to 2015.

Two key 2020 milestones are that governments representing nearly a third of world's catch have adopted effective policies for sustainable fishing and twice as many fishermen and women are fishing sustainably and benefiting from higher revenues and rebounding fish populations. We work to bring about systems change by aligning the needs of people with the needs of the oceans. Our approach combines incentives and accountability as we support providing fishermen and communities with rights to a secure share of the fish caught or access to a traditional fishing area.

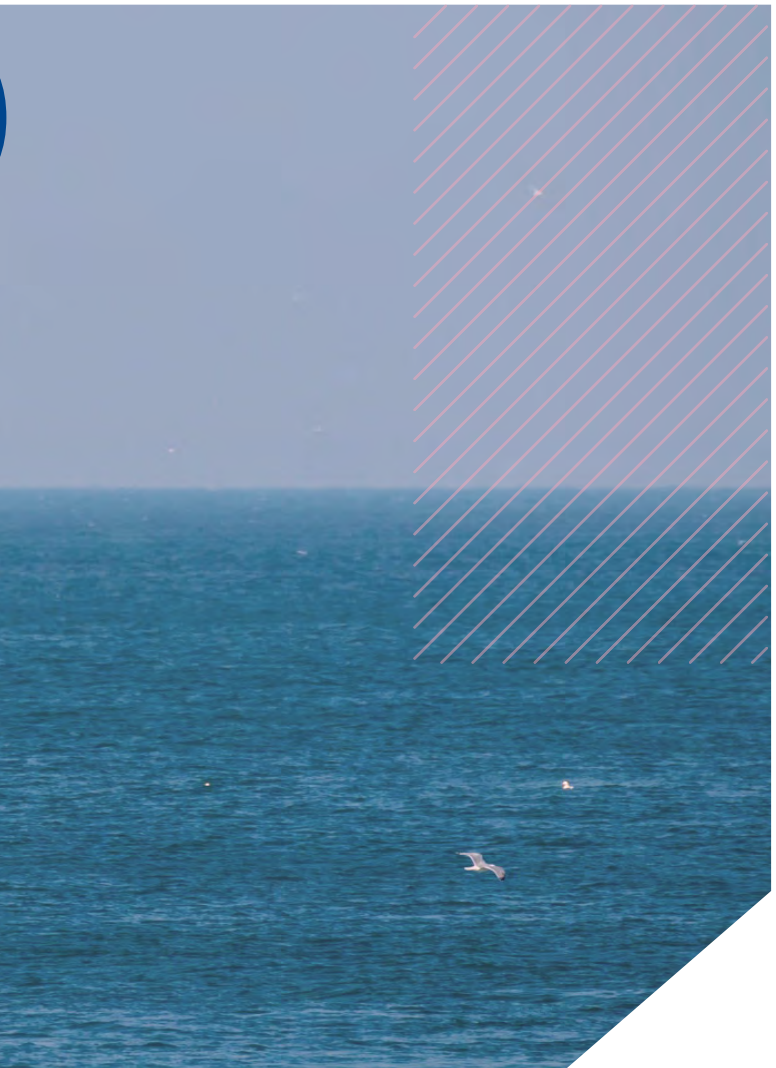
OCEANS

Goal

By 2020 Europe is leading the world by managing fisheries in the context of climate change in order to contribute to a 50% increase in fish in the global oceans and more than doubling the profits of European fishermen by 2025.

The importance of Europe

The European Union (EU) is among the top five global fishing powers and has already made some important strides in improving fisheries. Completing the region's transformation to sustainable fishing will deliver benefits for Europe, such as higher catches and profits, advance the region's status as a global leader, and contribute to recovering fisheries globally.



The EU updated its Common Fisheries Policy (CFP) in 2013 to ensure the long-term environmental, economic and social sustainability of fishing.

This landmark legislation, which alongside other NGOs we helped craft, has catalysed important progress in restoring depleted stocks and improving the economic performance of commercial fisheries, particularly in Northern Europe. Some fishermen and governments are already embracing sustainable fishing and reaping the benefits, with others poised to follow.

Despite this progress, hurdles remain. The pace of adoption in key member countries is slow and there are emerging challenges, such as changes in the range and abundance of fish caused by climate change. Further exacerbating these challenges is the ossified system of allocating fishery access amongst countries that is not adaptive to current realities; a lack of accountability in many fisheries leading to unsustainable fishing; and rigid implementation of the CFP's well-intentioned discard ban, which without new approaches could be challenging to implement effectively.

Brexit – unforeseen when the CFP was enacted – now presents both a threat and an opportunity. Brexit will likely cause a re-negotiation of the allocation of fish and fishing access between the EU and the UK, and between the UK and Norway. Northern Europe faces a choice between locking in the current, inflexible system — which is poorly equipped for an increasingly complex and rapidly changing environment — or developing governance and management solutions that are more adaptive and resilient to both political and climate shocks.

In the Mediterranean, the picture is far bleaker than in the North; many species have been severely depleted, and the use of successful management approaches, like science-based catch limits and secure fishing rights, lags far behind. Furthermore, the governance is complex, with the basin bordered by 21 nations, many of which are not part of the European Union.

Our strategy is focused on capitalising on the promise of the CFP, ensuring we maintain and protect the gains made thus far and build on them as we enter the next CFP reform cycle beginning in 2021.

Strategies

Spread effective solutions

Develop sustainable management programs in key fisheries in powerful member states in order to deliver conservation outcomes and meet local goals in a diversity of fisheries. Spread success Europe-wide through knowledge-sharing networks and other approaches.

Build new analytics and decision-making tools for climate resilient fisheries

Spur the design and uptake of new management approaches that are resilient to climate and political change by developing and deploying new scientific and economic research and creating user-friendly tools for implementation.

Maintain and advance robust policies

Convene and empower leaders to develop and implement solutions that set the standard for sustainable fishing, advance opportunities for innovation and align financial incentives, including upholding the conservation mandates of the CFP and developing best-in-class policies for climate resilience in fisheries.

Focus on science

With its world class scientists, EDF aims to bring the latest, most relevant scientific research to bear in analysing challenges and positing solutions. **Dr. Kristin Kleisner**, a member of the EDF Fishery Solutions Center, recently served as lead peer reviewer for a study, commissioned by the EU, of the impacts of climate change on European fish stocks. She is now teaming up with our London office to organise a workshop in Copenhagen with the scientists at ICES, the International Council for Exploration of the Sea, exploring how shifts in fish ranges and distributions triggered by climate change could affect management options in European waters.

What others are doing in this area

WWF is our partner in ensuring sustainability in Spanish small scale fisheries. Together we are working with small scale coastal fishermen to implement ecosystem-based co-management and secure fishing rights in numerous communities; this summer we will launch a joint website: a learning network platform, enabling stakeholders in other fishing communities to follow similar paths to reform thereby scaling up the impact of our work.

Oceano Azul (OA) is an exciting new player on the European scene. This Portuguese foundation was launched in March of 2017 in Lisbon and has made sustainable fisheries a core priority, and we are in preparation to launch a pilot project for small scale fishery management reform in Portugal that is modelled on our work in Spain.

Our Approach

Partner with fishermen and governments

We will continue to work directly with fishermen and governments to design and implement successful models of sustainable fishing in both small and large scale fisheries in Northern and Southern Europe. Rare among conservation NGOs, we already have a track record of working with fishermen in two politically important EU Member States: In partnership with the Swedish industry and government, we helped to transform Sweden's management system so that fishermen are meeting the CFP's tough conservation mandates while still fishing profitably. And in Spain we've worked with NGO and local government partners in six coastal communities — including two in the Mediterranean — to show how systems of secure fishing rights paired with strong roles for fishermen in management can keep small-scale fishing communities prosperous and strong.

We will build on these successes to inspire and spread reforms to other communities and countries. First, we will ensure the Swedish and small scale Spanish models we have helped design are robust and durable by completing their implementation through 2018. We will then showcase the Swedish system as a model for other Northern European countries and continue to build the Spanish learning networks that have already led six additional Spanish communities to begin pursuing reforms on their own. Finally, we will consider how to spread success, for example through learning networks, to encourage uptake in other countries, such as Portugal, whose per capita seafood consumption is the highest in Europe.

Build new tools

New analytical and decision-making tools are needed for managing the implications of climate change. In Northern Europe we are already seeing fish stocks, and the pattern of fishing, move in dramatic ways, which is putting pressure on an ossified system of management. For example, we've already seen overfishing of some species due to lack of coordination and agreement about access – as fish move into new waters they are targeted by these new countries while the countries who traditionally caught species continue to do so at similar levels as in the past. Conflicts over shifting fish stocks are especially playing out in the waters that will be under negotiation with Brexit. Developing an effective management system that can deliver conservation results and flexibility for fishermen is vital and will provide a model for a changing world.

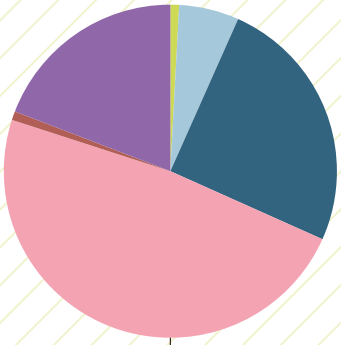
We will work hand in hand with key scientific partners, such as The International Council for the Exploration of the Sea (ICES),[6] and governments, to create and apply new analytics that show how climate change affects fish stocks and management systems. This will build on our groundbreaking research on global fisheries and climate change,[7] which shows that effective management to restore fisheries to good health can help to more than offset the impact of climate change on fisheries. For example, we will also explore innovative decision tools that model species range shifts as well as coordinated management approaches that can lead to better outcomes than countries working independently. We will make these analyses and tools available to key decision-makers so that they can advocate for effective, cross-jurisdictional management solutions.

Ensure robust governance frameworks in the European Union and key European governments

The CFP provides a strong legal framework for sustainable fisheries. We will focus on ensuring the next CFP reform, which will begin in 2021, maintains the existing conservation mandates and advances more rapid progress in restoring Mediterranean fisheries, a weak spot in the current policy. We will also work to advance reforms in Brussels that will make it easier for Member States to implement sustainable fishing, including secure fishing rights programs, and for fishermen to pilot innovative fishing practices, broadening the supportive constituency that can benefit from the law.

Regardless of Brexit, we are focused on the building a resilient and sustainable future for Northern Europe's fisheries. We will convene experts and thought leaders to design region-wide climate-smart management approaches, using the analytics and tools described above. We will also help them advocate for these multi-jurisdictional solutions through negotiations within and among Northern European countries and the EU. If successful, Europe will have a best-in-class solution for long-term adaptive management of fish under changing conditions and would be a model globally as no other government has effectively implemented flexible solutions and the challenge will only grow as climate change impacts take hold worldwide.

PROPORTION OF 2015 TAC by country



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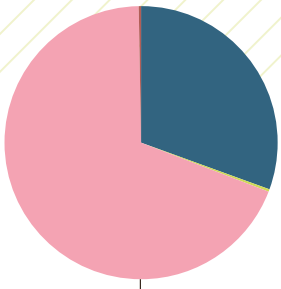

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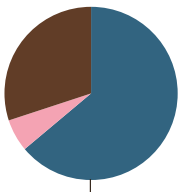

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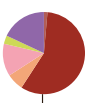


4 3190 mt

- UK
- Belgium
- Denmark
- Germany
- Netherlands
- France
- Ireland
- Sweden
- Spain
- Portugal

HAKE DISTRIBUTION IN 2000 & 2015

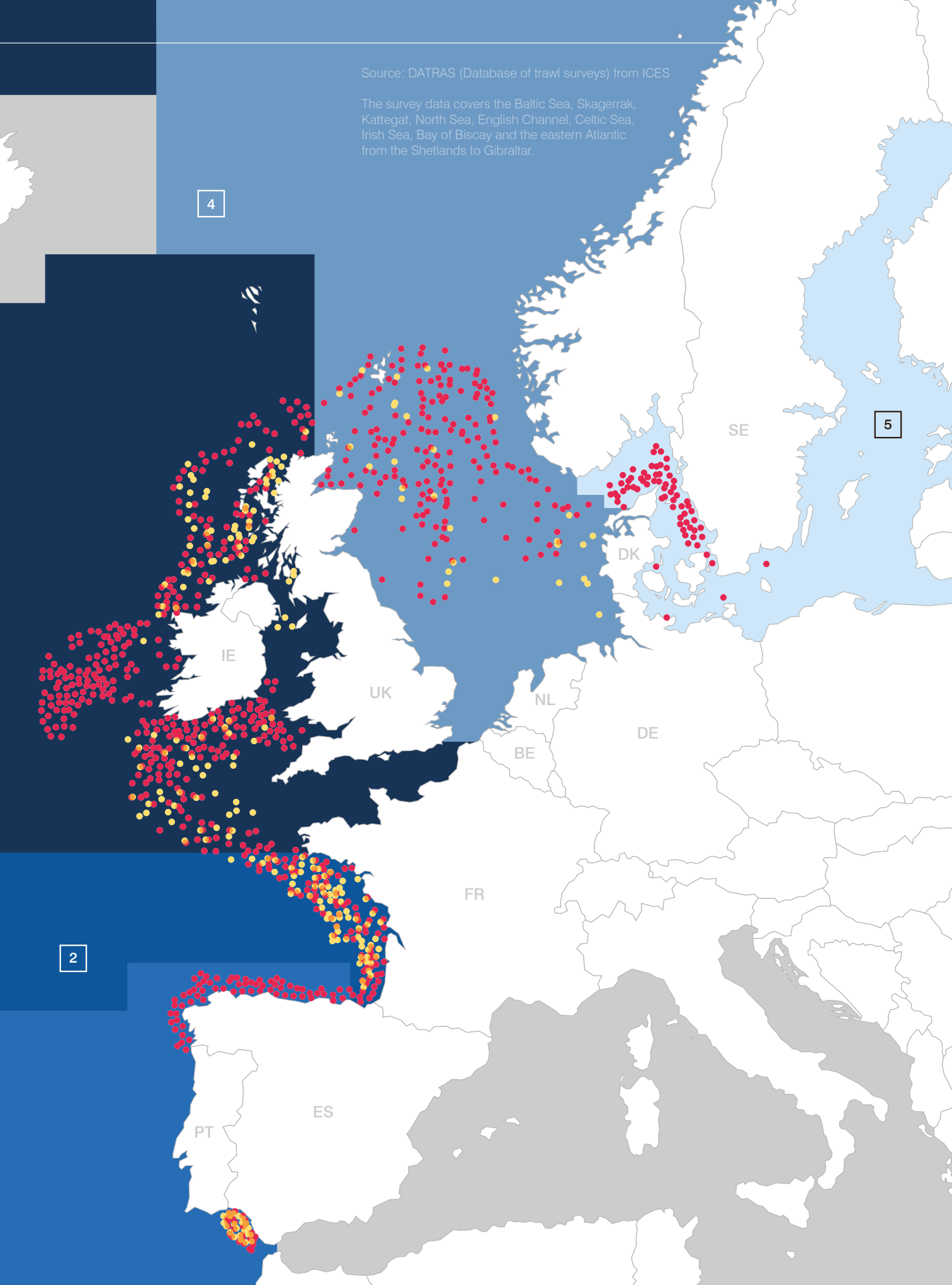
1

- 2000 Abundance
- 2015 Abundance
- No change

3

The data from ICES scientific trawl surveys* suggest a shift in overall hake distribution with a greater presence of hake in Northern European waters over a 15 year time period. Each blue shaded region (1 – 5) have science-based catch limits or Total Allowable Catch "TAC". The pie charts indicate the proportion of hake TAC allocated to each country in 2015. While the total allocated TAC changes year on year, depending on the state of the stock, countries' percentage shares are fixed based on historic (early 1980's) catch levels. As distribution of fish change over time, this inflexibility can create problems if fishermen lack quota for the fish they find in their waters.

*The data does not give overall abundance (numbers) or biomass (weight) of the species but indicates presence of hake for these particular trawl survey points.


Source: DATRAS (Database of trawl surveys) from ICES
The survey data covers the Baltic Sea, Skagerrak, Kattegat, North Sea, English Channel, Celtic Sea, Irish Sea, Bay of Biscay and the eastern Atlantic from the Shetlands to Gibraltar.
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Building a Strong Platform

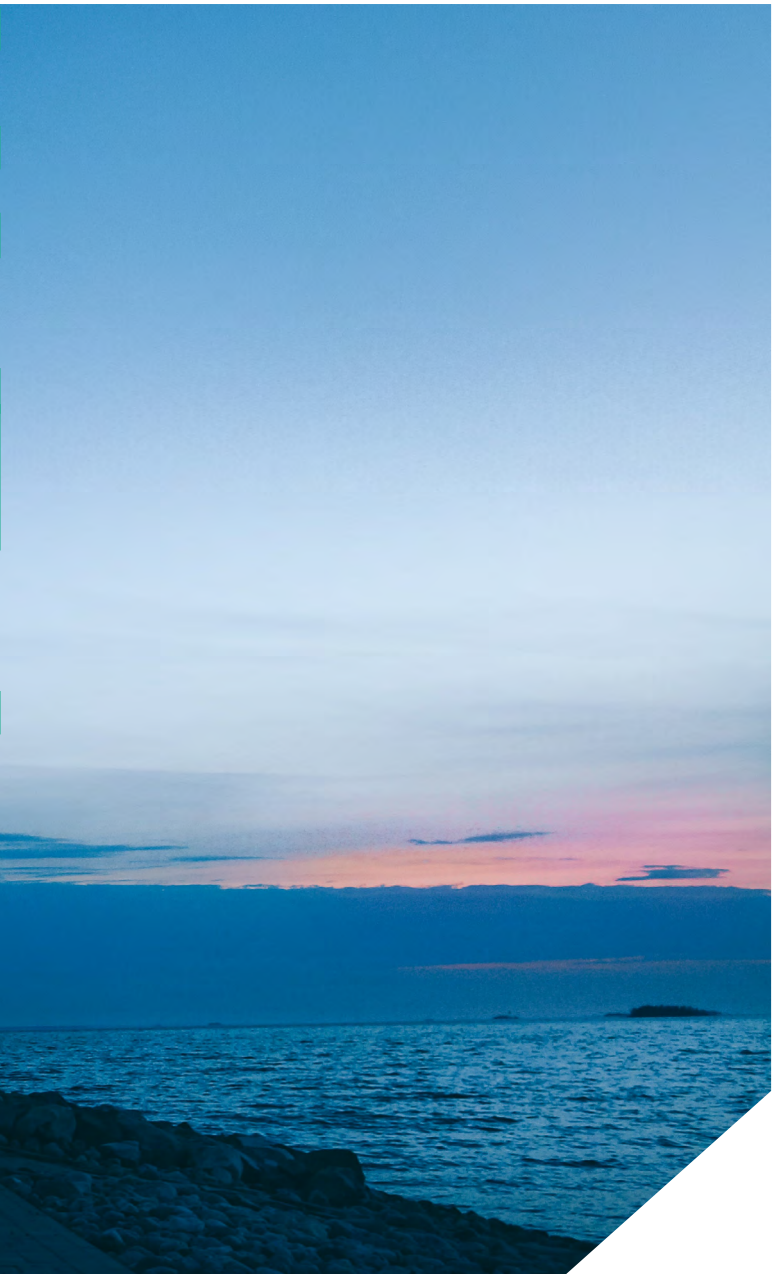
Underpinning Environmental Defense Fund Europe's work are the people, systems and reputation that enable us to achieve our goals. Whether it's attracting the best staff and partners, winning financial support for our ideas, designing effective information systems or creating legal structures that extend our influence, the global platform that helps supports our work is essential to our success.

STRONG PLATFORM

The importance of Europe

Today's difficult environmental challenges – and the aspirational program goals of this plan – require us to operate and perform across multiple jurisdictions both within Europe and globally. We will establish the structures that facilitate our work. We will recruit and retain the best people and draw on our staff and partners' varied perspectives and experience to build competencies, relationships and an internal culture that reflects our environmental values.

Financial resources: We must continue to attract the investment needed to achieve our goals and practice sound financial management. By adopting a pragmatic, solutions orientated approach we will seek to expand the resources made available to solve environmental problems.



Continuous learning: Because the world is changing at an ever-increasing pace, our staff must make continuous learning part of their daily professional lives. We will foster this with resources, educational experiences, training opportunities and effective metrics for assessment and rewards.

Data: The potential for big data to shed new light on environmental problems and solutions raises the stakes for information technology and other systems. We will improve our capacity to interpret such data. We also anticipate our need for collaboration and communication, providing best-in-class IT capabilities accordingly.

Communications: A great idea doesn't help the environment until it is adopted and put to work. We will increase our emphasis on communications that raise awareness and build support among a widening range of stakeholders and decision makers.

Some of our 2020 objectives:

- We have the appropriate structures and networks in place to be effective at a European scale.
- We are recruiting and successfully competing for a more diverse pool of top-tier candidates from business, government, non-profit groups and academia.
- We are building greater awareness and understanding of environmental issues and positive solutions among supporters and a range of influential people in business, politics and the media.
- We benefit from an integrated back-office platform that allows real-time access to financial, HR and global programme information.

Navigating Brexit

Our presence in Europe is relatively new and we have entered during a period of change. The definition of Europe has always been a relatively fluid concept but the result of the UK's referendum to depart the European Union makes this a particularly unsettled period. Our task is to build an organisation capable of achieving our goals even as the political landscape changes around us.

In order to achieve this we will need to invest in the appropriate legal and governance structures. As a result of the UK's likely departure from the Europe Union we are evaluating the establishment of a new subsidiary legal body with a view to making a decision to proceed in 2017.

Board of Trustees

Environmental Defense Fund Europe is a registered charity in England and Wales 1164661and a company limited by guarantee registered in England and Wales 09217493.

We have a Board of seven trustees who are responsible for overseeing the organisation's operations. EDF Global and EDF Europe share a common Chair of the Board which help provide co-ordination and consistency.

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End Notes

[1] https://www.edf.org/blueprint2020

[2] The EU Emissions Trading Scheme (EU ETS) was established in 2005 and operates in all 28 EU countries plus Iceland, Liechtenstein and Norway.

[3] The sectors regulated under the Effort Sharing Regulation are commonly referred to as the "non-trading" sectors as they are not part of the EU-ETS carbon trading system.

[4] Source: European Commission.

[5] CORSIA is a market based mechanism which will require airlines to offset the growth of their emissions after 2020

[6] ICES, The International Council for the Exploration of the Sea (ICES), is a global organisation that develops science and advice to support the sustainable use of the oceans.

[7] https://www.edf.org/media/smart-reforms-key-global-fish-recovery-even-climate-change?_ga=1.101643777.147448214.1487277645

Images

Front cover: Aurora Borealis on Senja Island, Northern Norway. *Tom Archer Photography*
The Northern Lights are a beautiful demonstration of the Earth's natural defences. Auroras are produced when the Earth's magnetic field is disturbed by charged particles from the sun. The Earth's magnetic field protects life on Earth.

Pg 7: Wind turbines in Mölsheim, Germany. *Karsten Würth*

Pg 9: Solar panels in Barcelona, Spain. *Biel Morro*

Pg 10: Electric car being charged in a street in Paris. *Håkan Dahlström*

Pg 13: Industry smoke at sunrise. *Foto-Rabe*

Pg 17: Arctic Discoverer in Hammerfest, Norway. *Torbein Rønning*

Pg 22: Fishing vessel in the North Sea. *Wolfgang Vogt*

Pg 28: Lighthouse in Oulu, Finland. *Dmitry Pavlov*

Front cover: Aurora Borealis on Senja Island, Northern Norway. *Tom Archer Photography*

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