



E3G

DISCUSSION PAPER - JUNE 2016

EU FOREIGN POLICY IN A CHANGING CLIMATE

A CLIMATE AND ENERGY STRATEGY FOR
EUROPE'S LONG-TERM SECURITY

**LUCA BERGAMASCHI, NICK MABEY, JONATHAN GAVENTA,
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About E3G

E3G are the independent experts on climate diplomacy and energy policy. We work to accelerate the transition to a low-carbon economy www.e3g.org

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SUMMARY

Managing climate change risk and an orderly global energy transition is critical to Europe's security and prosperity.

In June 2016 European Heads of State and Government will agree on a new Global Strategy. This is the first major strategic review since the European Security Strategy in 2003.

The 2003 review opened with the memorable words: *“Europe has never been so prosperous, so secure nor so free”*.

Thirteen years later, the global security context has changed immeasurably, and so too have Europe's objective foreign policy interests. The prosperity, security and freedom that the 2003 strategy boasted about is becoming increasingly challenged. Europe is continuing to struggle to reboot growth, investment and employment after the worst financial and economic crisis since World War II. A wave of instability across the Middle East and North Africa is unleashing war, human suffering and the massive displacement of people. Multilateralism itself is under threat from a rise of hard power politics and shifting regional spheres of influence.

Against this backdrop, it is increasingly evident that Europe's global strategic interests have become inseparable from managing climate risk and the global energy transition.

In previous decades, climate change was seen either as a distant threat or as a purely environmental issue. As illustrated by the 2015 G7 report *“A New Climate for Peace”*, the impacts of climate change are acting as *“threat multiplier”*, aggravating conflicts in Europe's neighbourhood. Extreme weather events across the globe are becoming more frequent and intense, and have contributed to current crises. If left unmanaged, climate change could undermine the foundations of Europe's prosperity and security, including economic, food, water and energy security.

At the same time, the previous foreign policy priority of ensuring reliable access to affordable supplies of fossil fuels has become less of an issue. Structural changes in energy demand, new energy technologies and a global glut in energy supplies have made the EU less exposed to energy security risks than in the past. In its place, new foreign policy challenges on energy are emerging. These include managing the consequences of low and volatile commodity prices on the stability of fossil-dependent economies, and ensuring Europe's economy can gain maximum benefit from rapidly-developing global markets in clean energy technologies.

Europe's foreign policy interests have changed. Managing climate risk and an orderly global energy transition are now critical to Europe's security and prosperity. These themes must be central threads running throughout EU foreign policy. This paper sets out how.

1. Europe needs multilateralism to shape the world

There is increasing pessimism among global publics and elites that multilateral cooperation is feasible and effective in providing security and prosperity. This despair is fuelling the rise of populist, nationalist and protectionist forces worldwide and inside Europe. As trust in international law and institutions declines, Europe will not be able to succeed in a world defined by competing Great Power politics. In contrast, the success of the Paris Agreement shows that successful international cooperation is possible given sufficient investment of political support, creative diplomacy and mobilisation of broad coalitions.

The EU has long recognised that it needs a successful global climate regime in order to achieve a stable climate and to safeguard the conditions of its future prosperity. It is now clear that the EU needs the Paris Agreement to succeed not only to ensure the stability of the global climate but also to ensure the success of multilateralism itself.

The European External Action Service (EEAS) should use the lessons of Paris to rebuild confidence in multilateralism and redesign its approaches to other international negotiations. **This will require developing an integrated diplomatic strategy to support other countries to ramp up their climate contributions in 2020 and 2025 to meet the “well below 2°C” trajectory; reviewing EU domestic climate targets to 2050 and reassessing the 2030 targets against this review; resetting EU energy diplomacy and energy security strategies in line with the new climate diplomacy strategy and economic opportunities; expanding the capacities and capabilities of the EEAS in light of the broader mandate around climate and energy.**

2. Europe needs to manage climate risk to stay secure

Climate change is the “ultimate threat multiplier” and more challenging than other global issues because it is a race against time. European citizens and business are exposed to an already noticeable trend of increasingly frequent and intense heat waves, droughts and flooding, which is driven by climate change.

Climate risk threatens core European interests. Efforts to ensure security and prosperity inside and outside European borders could all be jeopardised by uncontrolled climate change. Already, in the middle latitudes of the Northern Hemisphere average temperatures are increasing at a rate equivalent to moving south 10 meters each day. Glaciers in the Arctic are melting up to three times the rate observed in the 20th century. Over the past three decades Europe has seen a 60% increase in extreme weather events with dire consequences for human health, water supplies, tourism, agriculture, transport and energy infrastructure.

The Paris Agreement makes us safer but not safe. The emission reductions pledged by countries, known as the Intended Nationally Determined Contributions (INDCs), still put the world on course for an increased average temperature of up to 3.7°C to 2100. The sensitivity of the climate system to rising emissions may also be higher than

expected, leading to faster and more destructive “tipping points”. Governments need therefore to plan for and risk-manage a broad range of climate-related impacts and threats.

The level of future climate change impacts Europe will face is uncertain, but uncertainty per se cannot be an excuse for inaction. **In the face of a serious security threat and great uncertainty, Europe must adopt a strategy which is resilient to all eventualities, including worst-case scenarios.** The foundation of European security cannot be built simply on the hope that agreed commitments will be delivered on time to avoid dangerous climate impacts or that worst-case scenarios will not materialise.

This means EU institutions and Member States need a new approach to climate risk, which seeks to both reduce the probability of bad outcomes and to manage the potential severity of their consequences.

3. Managing the orderly transition of fossil fuels suppliers to stay safe

Contrary to the energy expectations of European foreign policy at the turn of the century, fossil fuels imports in Europe have declined by over 10% since 2003. A strong increase in renewables and energy efficiency is driving a steep decline in fossil fuels consumption across Europe. The main foreign policy issues around fossil fuels today are not dealing with scarcity, but rather ensuring an orderly transition away from fossil fuels – including managing the impacts on fossil fuel producing countries.

Europe has a strategic interest in the transition of fossil fuel producing countries as most of its oil and gas suppliers are fragile states whose instability will be exacerbated by climate change. Instability in those states threatens not only EU fossil fuel supplies, but also risks feeding broader conflicts and displacement of people.

However, current support is not well targeted. Fossil fuel projects still enjoy a majority of foreign investment – deepening rather than lessening dependence. The financial and economic support packages from EU Member States have the potential to smooth the transition. **Europe’s domestic and external decisions need to avoid building in instability by promising import demand that will not materialise as Europe cuts its dependence from fossil fuels. Instead, the EU should work together with fossil fuel producing countries to help diversify their economies and make them more resilient to future climate shocks.**

4. Europe’s security rests on its neighbours’ stability

If Europe wants to successfully stave off disorder in its neighbourhood, external policies need to address the root causes of instability and better integrate its neighbours. Climate change and fossil fuel volatility are exacerbating factors that have been overlaid on economic, demographic and political pressures that are challenging the conditions for stability in the European neighbourhood and have contributed to the multiple crises facing Europe.

The Middle East and North Africa (MENA) region have suffered the worst drought in 900 years, escalating the potential for conflicts over water resources, large-scale disruptions of food systems, and related mass displacement of people. In Syria, climate change acted as a threat-multiplier following a record drought which drove 1.5 million people from the country's breadbasket areas to urban peripheries, where the first protests ahead of the civil war began. By 2040, the risk of similar 1-in-100 year food production shocks is expected to increase to 1-in-30, and 1-in-15 years in the decades after 2050.

Ensuring the stability of Europe's neighbourhood requires ensuring sustainable investment in the region, including developing resilient infrastructure, food, water and energy systems and addressing unemployment. This investment can also directly benefit the EU, through opening opportunities for European companies and integrating energy markets. **The EEAS should develop a "clean industry and technology diplomatic strategy" in cooperation with DG Energy and DG DEVCO for engagement with neighbouring countries. This should focus on cost reductions and job creation through energy demand management, development of local supply chains, open trade, coordinated research and innovation, and clean energy deployment and interconnection.**

5. Access to clean markets is more important than access to fuels

The new energy economy is today at the heart of Europe's economic and energy security. Fossil fuel consumption has declined by 20% since 2010 while over €400 billion have been invested in clean energy across Europe. Renewables are cutting annual demand for fossil fuels equivalent to that of France, putting any new fossil fuels infrastructure at risk of becoming stranded.

As the energy transition accelerates, Europe's energy security, technological leadership and competitiveness will depend on clean investment, cost reductions, low carbon trade, and clean market growth to safeguard its future. Delivering existing INDCs will require at least \$2 trillion over the next 15 years in clean energy. And achieving global growth expectations will require \$90 trillion in infrastructure investment, or \$6 trillion per year.

Despite the growing opportunity, Europe is losing ground and is no longer the global engine for clean energy investment. China is investing more than twice as much in clean energy than the EU in absolute terms and the same per capita, with plans to deploy 3.5 times more wind power and 6 times more solar by 2020.

Global trade in clean technology needs to become the core focus of EU energy diplomacy. This should shape the EU's diplomatic engagement with large energy consumers and producing countries, in the Clean Energy Ministerial, the G7, G20, and EU-China and EU-US Energy Summits. At the same time, diplomatic efforts should focus on maximising the impact of European climate finance on delivering the INDCs, and redirect flows of public and private investment away from high risk, high carbon assets towards low risk, low carbon and resilient options.

INTRODUCTION

When faced with this world of disorder and of opportunity, two things are clear. First, global trends are neither linear nor preordained, but often the product of shocks and human choices. This highlights the uncertainty that lies ahead, but also the role of agency – including that of the EU – in moving forward. We may not fully know our future, but we can shape it. Second, the European Union does not have the luxury of turning inwards. We have a responsibility to protect our citizens, while promoting our interests and universal values.

- European External Action Service, 2015¹

Since the last European Security Strategy in 2003, the world has changed – and so too have European strategic interests. The upcoming EU Global Strategy, which will be presented by the EU's High Representative for Foreign Affairs and Security Policy Federica Mogherini in June 2016, is a key moment to refresh the EU's approach to maintaining its prosperity and security in a rapidly changing world.

Managing climate risk and an orderly global energy transition is now central to Europe's prosperity and security. **This will require a new approach to diplomacy, to the European neighborhood, to trading partners and fossil fuel suppliers, to investment and development assistance and to global markets.**

This report explores practical actions that EU foreign policy institutions could undertake to manage climate risk and an orderly global transition.

¹ EEAS (2015), *The European Union in a changing global environment*

CHAPTER 1

MULTILATERALISM IS EUROPE'S FUTURE

In an increasingly multi-polar world Europe needs multilateralism to shape global affairs. The Paris Agreement, a success of European diplomacy, is a significant achievement in contemporary diplomacy. It shows a new and innovative approach to multilateralism. Europe should use these lessons to rebuild confidence in multilateralism and redesign its approaches to other international negotiations.

Europe has never been so prosperous, so secure nor so free.

- European Council, 2003²

Europe's foreign policy interests have changed

Since the 2003 European Security Strategy, the speed of political, economic, social, technological and environmental change has taken place at an unprecedented rate. **As Europe's military and economic power diminishes, multilateral agreements have become key to deliver European interests in an increasingly multi-polar world.**

At the same time, global appetites for effective multilateralism – the strengthening of international organisations and treaties, and the enforcement of obligations by third countries – has seen strains over the past 13 years.

At the onset of the Iraq War in 2003 few had imagined the far-reaching effects of the failed democratic transition of the Arab Spring, the civil war in Syria and Iraq, the collapse of the central Government in Libya, authoritarian rule in Egypt and Turkey, the rise of the Islamic State – the most radical threat to European security since the end of the Second World War³ – and hundreds of thousands of refugees arriving on the shores of Europe every month. These have had tremendous consequences both for the political geography of the Middle East and the streets and shores of Europe.

² European Council (2003), *A secure Europe in a better world*

³ P. Cockburn (2014), *The Jihadis Return – ISIS and the New Sunni Uprising*

The Paris Agreement is a success of European diplomacy

In a world without multilateralism Europe will struggle to project its influence outside its borders and manage change peacefully. In this challenging geopolitical context, the importance of the UN Paris Agreement, signed in December 2015, goes beyond climate change alone. Together with the agreement of the new Sustainable Development Goals in 2015, **the Paris Agreement forms a rare example of successful European diplomacy and a significant achievement in contemporary multilateral diplomacy.** It shows that it is possible to agree complex international regimes to manage critical global problems.

The Paris Agreement gives a clear and incontrovertible direction of travel towards a decarbonised global economy. It strengthens the global goal – first championed by the EU – to keep global temperature increase well below 2°C and to pursue efforts to limit it to 1.5°C to protect the most vulnerable. It added a more specific target to achieve global peaking of greenhouse gas emissions as soon as possible, and to reach greenhouse gas emission neutrality in the second half of the century.⁴ This goes further and faster than anything previously agreed or thought possible.

Through the legally binding framework all countries (195) have committed to exit from fossil fuels and reconvene every five years to increase pollution cuts. Backsliding from past pledges is explicitly outlawed. The clear outcomes achieved in Paris will give actors the confidence to invest and the knowledge that their additional actions will actually impact the global risk of climate change.

The process that led to the agreement brought together countries, cities, businesses, movements and investors to land a shared agreement which keeps pace with the balance of power in the modern world. It catalysed an extraordinary set of commitments resulting in “shared leadership” of the global challenge, a new approach to multilateralism.⁵ This form of innovative multilateralism sets a positive example for other global challenges.

⁴ UNFCCC (2015), *The Paris Agreement*

⁵ The RE100 group of major companies (ranging from Google to Goldman Sachs, and Microsoft to Coca Cola) committed to source their electricity from 100% renewable sources. Nearly 1,000 mayors from five continents pledged to deliver a transition to 100% renewable energy in their communities or an 80% reduction in greenhouse gases by 2050. 400 investors representing over \$24 trillion signed the Global Investor Statement on Climate Change to increase low-carbon and climate resilient investments. In Europe, 16 leading companies from across the built environment committed to nearly zero energy buildings for new build by 2020 and for refurbished buildings by 2030.

How Europe helped deliver the Paris agreement

The EU played a key role in making the unexpectedly strong Paris Agreement. The Paris outcome shows the impact European diplomacy can have when aligned around a clear strategy.

The German-convened G7 summit in June 2015 provides one example of Europe's Paris strategy in action. G7 leaders committed for the first time to phase out fossil fuels in the second half of the century and to provide climate insurance for the most vulnerable.⁶ This moment crucially socialised the value and significance of an operationalised long-term temperature target to drive shifts in the real economy. The commitments showed Europe, alongside other major economies, took responsibility and embraced the true scale of the climate challenge.

Europe's track record in multilateral agreements demonstrated the value for countries to go further and faster together. The French Presidency of COP21 was critical in creating the stage for political ambitions to emerge by delivering a masterclass in classical and modern diplomacy.

Europe was an early supporter of many of the most important aspects of the agreement including the ambition mechanism and the provision of finance for the most vulnerable countries. This awarded Europe the opportunity to act as an effective deal shaper, bridge builder and broker between Parties particularly the United States and the most vulnerable countries. European diplomats built new alliances to break down old divides. It helped form a new "high ambition coalition" expanding the reach of their partnership with the most climate vulnerable countries.

Paris succeeded because countries now believe there is greater risk to their national interest in failing to tackle climate change than in moving to a low-carbon economy. This fundamental political shift was a consequence of long-running European climate leadership demonstrating the multiple benefits of climate action. The EU 2020 Climate and Energy package kick-started global markets in clean energy technologies through a mix of renewable targets, efficiency standards, carbon pricing and innovation policy. Delivering this through open markets stimulated global supply chains, which dramatically lowered the costs of clean energy. It also positioned EU companies as leaders across the fast-growing \$5 trillion global low-carbon economy - though this leadership is threatened by other countries including China.⁷

⁶ European Council (2015), G7 summit, Schloss Elmau, Germany

⁷ UK's Department for Business Innovation & Skills (2013), Low Carbon and Environmental Goods and Services

Europe needs multilateralism to shape the world

Europe now needs to demonstrate that it takes the Paris Agreement seriously and can show its international partners that ambitious action is being implemented domestically, including:

- › **Developing an integrated diplomatic strategy between Member States and the EEAS to ensure countries ramp up their ambitions in 2020 and 2025 to meet the well below 2°C trajectory.** Climate change must become a core element of Europe’s diplomatic priorities to carry this momentum forward and implement the strong multilateral agreement. European diplomacy will be crucial for delivering the outcome of the Paris Agreement, and continuing to make multilateralism work, in the G7, G20, International Financial Institutions, Multilateral Development Banks, upcoming climate summits and the broader sustainable development agenda, including the 17 Sustainable Development Goals.
- › **Recognising that domestic action is a core part of Europe’s diplomacy in implementing the Paris agreement.** In the years running up to the Paris Agreement the EU consistently showed that ambitious domestic actions put pressure on key players and emerging countries to follow suit. This has had a significant impact on Europe’s political leverage with other countries ahead of Paris. The EU should review its long term emission reduction target of 80-95% by 2050 with a view of tightening it to the more ambitious end as well as reviewing the least cost emissions reduction pathway in 2017, in time for the first review of mitigation efforts in 2018. The “at least 40%” reduction target by 2030 needs to be reassessed against this review. With significant legislative proposals coming forward in this area in 2016 and beyond, it is now necessary to assess EU ambitions and priorities.
- › **Resetting the EU energy diplomacy and energy security strategies in line with the new climate diplomacy strategy and economic opportunities.** The Energy Union’s domestic vision of a zero carbon economy by mid-century needs to be put at the heart of Europe’s external energy relations, until now overshadowed by a narrow focus on short-term concerns about access to and development of fossil fuels in spite of declining demand. Clean energy, energy efficiency, smart demand management and innovation should shift from secondary strategic objectives to first drivers of diplomatic, geopolitical, economic and development decisions.
- › **Expanding the capacities and capabilities of the European External Action Service (EEAS) in light of the broader mandate around climate and energy.** The EEAS should carry out an in-depth analysis of EU foreign policy priorities in line with the outcome of the Paris Agreement and the emerging risks to national and international security. Greater coherence and an inter-departmental approach are needed to go beyond a narrow security mandate.

CHAPTER 2

CLIMATE RISK IS A CORE SECURITY THREAT

Efforts to ensure security and prosperity inside and outside European borders could all be jeopardised by uncontrolled climate change, the biggest threat humanity will face in the next decades. Climate change is more challenging than other global issues because it is a race against time. If Europe wants to lower the probability of bad outcomes and limit their consequences, Member States and the European Commission need to adopt a comprehensive climate risk management framework and to embed it in European security strategies, foreign policies and domestic action.

Resilience, in the long run, is about fighting climate change. You know better than anyone else how destabilising a flood or a drought can be. You know that, in today's wars, a dam can be more strategic than an oil refinery. It is by no chance if the most vulnerable part of Africa is the belt running from Mauritania to Somalia, all through the Sahel. Resilience is about fighting desertification, and promoting climate-smart agriculture.

- High Representative of the European Union for Foreign Affairs and Security Policy / Vice-President of the European Commission Federica Mogherini, 2015⁸

Climate change has become a top global threat

Until the beginning of the 21st century climate change was seen as distant threat – the 2003 European Security Strategy failed to mention climate change once.⁹ Today, it is the most widespread concern around the world, and considered a top global threat by many publics and foreign policy professionals.¹⁰

In a 2015 survey, prominent international relations experts ranked it as the number one foreign policy issue for the United States.¹¹ The 2016 World Economic Forum's Global Risks Report ranks the failure of climate change mitigation and adaptation as the most impactful risk for the years to come. Severe energy price shock (increase or decrease) and large-scale migration were also rated among the top five risks.¹²

⁸ Speech by High Representative/Vice-President Federica Mogherini to the African Union (20 October, 2015)

⁹ European Council (2003), A secure Europe in a better world

¹⁰ Pew Research Center (2015), Climate Change Seen as Top Global Threat

¹¹ Foreign Policy (2015), A survey of America's top International Relations scholars on foreign-policy research Climate change beat out other important issues such as armed conflicts in the Middle East, failing or failed states, and China's growing military power, by at least a 14% margin.

¹² World Economic Forum (2016), The Global Risks Report 2016

The US is currently ahead of most other nations in translating assessments of climate security risks into strategic, operational and procurement decisions. In Europe, the same level of sophisticated understanding or discussion on climate risk is lacking and there is a danger of underestimating and consequently mismanaging the risks Europeans face. Although Europe has already experienced major losses from climate change impact, public concerns remain relatively low compared to higher levels in emerging economies.¹³

There is no security without climate security

Over the past two decades, overwhelming scientific evidence have shown that a continual rise in greenhouse gas emissions is projected to further warm the planet, increase the frequency and impact of extreme weather events, and cause long-lasting climatic changes, threatening severe and irreversible consequences for people and ecosystems.¹⁴

Already, in the middle latitudes of the Northern Hemisphere, average temperatures are increasing at a rate equivalent to moving south by 10 meters each day. This rate is about 100 times faster than most climate change observed in the geologic record.¹⁵ Glaciers in the Arctic are melting up to three times the rate observed in the 20th century, and in some areas of Greenland ice loss has tripled since 2003.¹⁶ The West Antarctic ice sheet, whose collapse alone is capable of raising sea levels by over 3.5 meters, is showing disturbing levels of instability.¹⁷ Between 1990 and 2012, global emissions of CO₂ increased by over 50%, leading to CO₂ concentration levels never experienced before by humans.

If uncontrolled, these changes will have significant political, economic, and social impacts by undermining the pillars of stability: food, water and energy security.

The World Bank estimates that by 2025 climate change will result in 1.4 billion people across 36 countries facing crop or water scarcity. By 2050, 200 million people may be permanently displaced climate migrants.¹⁸ And up to 1.3 billion people and \$158 trillion in assets could be exposed to river and coastal flooding.¹⁹ Rising sea levels are already driving people out of Bangladesh and into India, in large numbers – up to 20 million Bangladeshis could be displaced by the middle of the century.²⁰

¹³ **Pew Research Center (2015), Climate Change Seen as Top Global Threat**

¹⁴ **Intergovernmental Panel on Climate Change's Fourth (2007) and Fifth (2014) Assessment Reports** The IPCC is the leading international body for the assessment of climate change. It was established by the **United Nations Environment Programme (UNEP)** and the **World Meteorological Organization (WMO)** in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.

¹⁵ **MIT Technology Review (2016), Stop Emissions!**

¹⁶ **Center for American Progress (2015), Arctic Warming and What It Means for the Region and the Planet**

¹⁷ **J. Gillis in The New York Times (2016), Climate Model Predicts West Antarctic Ice Sheet Could Melt Rapidly**

¹⁸ **Chatham House (2012), Resources Futures** Today, 600 million people in 21 countries are affected.

¹⁹ **Global Facility for Disaster Reduction and Recover (2016), The making of a riskier future: How our decisions are shaping future disaster risk**

²⁰ **Foreign Policy (2015), The Meltdown of the Global Order**

Agricultural productivity is at risk in key exporting breadbasket regions, such as North America, South America, the Black Sea area and Australia, and in the two most populous nations on Earth, India and China. Some of the most severe risks are faced by countries with high levels of existing poverty and food insecurity, which are highly dependent on agriculture and imports for livelihoods.²¹

Major import crops such as wheat are likely to increase in price by up to 80% by 2030 due to growing global demand; climate change could increase prices by a further 40%.²² By 2040, the risk of a 1-in-100 year food production shock is likely to increase to 1-in-30 or more, and 1-in-15 years in the decades after 2050.²³ Changes in agricultural production and consumption will also have wider health impacts by changing the composition of diets. Climate change could increase dietary and weight-related deaths by one third, leading to more than half a million deaths worldwide by 2050.²⁴

Water demand could be as much as 40% higher than supply by 2030. Prolonged periods of drought and growing population will exacerbate unsustainable water withdrawals. For example, annual water supply per capita in Egypt has already dropped 60% since 1970 and by 2025 the UN expects Egypt to face “absolute water scarcity” with 80 to 100 million people exposed in the region.²⁵ Many capital cities and commercial centres around the world are located along the coastline, which puts them at severe risk from sea level rise. Many of the most affected regions are also densely populated: an estimated 80% of the world’s population currently live in areas with high levels of threat to water security.²⁶

²¹ **World Economic Forum (2016), The Global Risks Report 2016** Even at low levels of warming, the most vulnerable countries will suffer serious impacts. For example, in Sub-Saharan Africa 1.5°C of warming globally by the 2030s could bring a 40% loss in maize cropping areas. A world that is 2°C warmer would bring unprecedented heat extremes in summer across 60-70% of South-East Asia. Warming of 4°C would likely bring increasing extremes in rainfall patterns in South Asia – up to a 30% decline in the dry season and a 30% increase during the wet season – increasing the risk of both flood and drought.

²² **Oxfam (2011), Growing a better future – Food justice in a resource-constrained world**

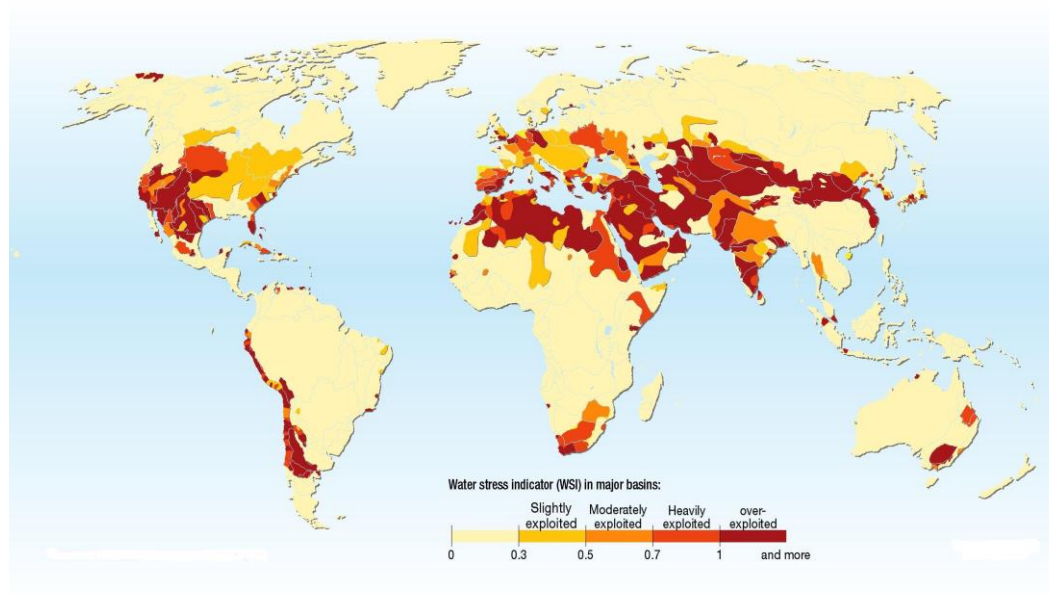
²³ **Global Food Security (2015), Extreme weather and resilience of the global food system**

²⁴ **The Lancet (2016), Global and regional health effects of future food production under climate change: a modelling study**

²⁵ **Guardian Africa Network (2015), 'We woke up in a desert' – the water crisis taking hold across Egypt**

²⁶ **Chatham House (2012), Resources Futures**

Figure 1: Water scarcity index



Source: *Philippe Rekacewicz based on Smakhtin, Revenga and Döll*

Hydropower and thermal power stations – the latter converting heat to electricity from burning fossil, nuclear or biomass fuels – rely on freshwater from rivers and streams for cooling the stations. As the climate warms, water availability is projected to significantly decline and water temperatures to increase. Regions with high share of hydropower, coal, gas and nuclear, such as Europe and the United States, risk being affected by major drought-driven blackouts and restrictions in electricity demand, some of which have already happened.²⁷

²⁷ **IIASA (2016), Worldwide electricity production vulnerable to climate and water resource change** Power stations in Europe and the United States are most at risk under a changing climate. See also **IASS (2016), Secure and Sustainable Energy in a Water-Constrained World** A delayed monsoon in 2012 reduced hydropower generation in India, resulting in two days of blackouts affecting 600 million people; during the worst drought in Brazilian history in 2015, 4 million people were affected by electricity cuts.

Climate impacts in Europe are already a costly reality

European citizens and business are exposed to a noticeable trend of increasingly frequent and intense heat waves, droughts and flooding, which is driven by climate change.

Over the past three decades, Europe has seen a 60% increase in extreme weather events with dire consequences for human health, water supplies, tourism, agriculture, and transport and energy infrastructure.²⁸ For example, the 2003 summer heat-wave, the warmest of the past 500 years, caused between 55,000 and 70,000 deaths across Europe and many European countries experienced their highest temperatures on record;²⁹ in early 2014, flooding and winter storms caused an estimated €20 billion in economic damages in the UK alone;³⁰ and the 2015 extreme heat-wave struck caused €2 billion in overall losses ranking it as the highest loss from heat-wave and drought in 2015 globally, only about a tenth of which was insured.³¹

Water stress is increasingly occurring in many regions of Europe and climate-induced scarcity and drought will further compromise the availability of fresh water across the continent. Already, 14% of the European population, around 70 million people, live under water stress conditions during summer (30 million during winter) while 20% of the total population in the Mediterranean region live under permanent water stress conditions.³² Water stress has also wider ramifications for energy security. The exceptional heat wave during the 2015 summer forced the Polish Government to restrict power demand in key industries in order to prevent the electricity grid from collapsing as rivers failed to cool the Polish coal plant fleet, which is responsible for 70% of water withdrawal in the country.³³

Experts estimate that unless action is taken now the economic costs to European cities, which host 78% of European citizens and generate 85% of Europe's GDP, could reach over €190 billion annually by 2070.³⁴

²⁸ EASAC (2013), *Trends in extreme weather events in Europe: implications for national and European Union adaptation strategies*

²⁹ G. Jendritzky (2007), *Folgen des Klimawandels für die Gesundheit* and Robine J. et al. (2008), *Death toll exceeded 70,000 in Europe during the summer of 2003*

³⁰ J. Confino (2014), *Kerry's and Miliband's climate change speeches should mobilise business*

³¹ MunichRe (2016), *El Niño curbs losses from natural catastrophes in 2015*

³² EEA (2016), *Is Europe's freshwater use sustainable?*

³³ FT (2015), *Polish manufacturers hit by power cuts* and Energydesk (2016), *Investigation: Coal plants risk global water shortage*

³⁴ Joint Research Centre (2014), *Climate impacts in Europe*

Europe needs to manage climate risk to stay secure

The level of future climate change impacts Europe will face is uncertain and will depend on fundamental questions such as how much global average temperatures will rise and how effective countries will be in limiting emissions through decarbonisation plans and in implementing adaptation strategies.

Despite the success in Paris, the emission reductions pledged by countries, known as the Intended Nationally Determined Contributions (INDCs), put the world on course for an average temperature increase of 2.7-3.7°C by 2100 above pre-industrial levels unless additional action is taken.³⁵ If geopolitical tensions and short-term crises shift the political focus away from the Paris Agreement, this could slow down decarbonisation trends. Similarly, the sensitivity of the climate system to emissions increase could be higher than expected, leading to faster and more destructive climate change than expected. For example, with above 3°C of warming the probability of breaching “tipping points” – thresholds beyond which global warming could accelerate out of control causing ecosystems and economies to collapse – rises sharply.³⁶

In the face of a serious security threat and uncertainty, Europe must adopt a strategy which is resilient to all eventualities, including worst-case scenarios. The foundation of European security cannot be built simply on the hope that agreed commitments will be delivered on time to avoid dangerous climate impacts or that worst-case scenarios will not materialise.

EU institutions and Member States need a new approach to climate risk. Managing it effectively will require the adoption of a rigorous “ABC climate risk management framework” in order to reduce both the probability of a bad outcome and the potential severity of its consequences.³⁷ Climate risk management requires accounting for the full range of possible outcomes and understanding the deficiencies of our institutional systems in the face of these threats.

- › **Aim to stay well below 2°C and pursue efforts to limit global warming to 1.5°C.** The most certain way to mitigate security risks is to lower the amount of warming. Domestically, the European Commission needs to review its targets in line with a warming trajectory of well below 2°C. Externally, the European Commission needs to implement an integrated post-Paris diplomatic strategy with Member States to ensure countries ramp up ambitions in 2020 and 2025.

³⁵ World Resources Institute (2015), *Why Are INDC Studies Reaching Different Temperature Estimates?*

³⁶ E3G (2011), *Degrees of Risk – Defining a Risk Management Framework for Climate Security*

³⁷ For a comprehensive overview see E3G (2011), *Degrees of Risk – Defining a Risk Management Framework for Climate Security*

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- › **Build and budget for 3-4°C.** Some impacts of climate change are unavoidable due to warming already in the system from current CO₂ concentration levels. This will require larger and more frequent humanitarian and preventive missions, better coordination, higher levels of civilian capability, and greater investment in preventive approaches to natural disasters. Groups of Member States should develop joint regional scenarios based on warming of 3-4°C and use these to drive the development of, and financial resources for, contingency plans and enhanced response capability. The EEAS should pursue solutions to use multilateral agreements to reduce conflicts over resources and preserve a rule-based global order. This includes reforming resource-sharing mechanisms, enhancing international arbitration, and improving scientific cooperation. Failure to improve resource management regimes now may make them ineffective reconcilers later as conflicts intensify and foster power-based approaches instead of cooperation.
 - › **Contingency plan for 5-7°C.** A growing body of evidence suggests that vulnerability to catastrophic climate impacts might be higher than expected. As it is not possible to adapt to some of the worst-case scenarios, it is vital to maintain a capability to implement a crash mitigation program should they occur. Member States should agree on a management framework for potential contingency programmes or risk serious side effects of panicked responses to extreme climatic events in the future.

A critical step for an effective ABC climate risk management framework is the creation of an independent body, such as a “European Energy and Climate Risk Observatory” (EECRO). A failure to separate policy development and assessment risks biasing the desired outcome to justify initial policy assumptions. Without accurate data and tools decision-makers will fail to identify and address key challenges. This new institution should therefore:

- › Provide independent assessments of the effectiveness of national and international policies;
- › Reinterpret existing data and develop new ones;
- › Systematically monitor climate “tipping points” through a long-lived monitoring system that integrates earth and socioeconomic observations and prioritizes issues of highest potential threat.

CHAPTER 3

STABILITY REQUIRES AN ORDERLY TRANSITION OF FOSSIL ECONOMIES

In contrast to the energy expectations of European foreign policy at the turn of the century, fossil fuel consumption in Europe is declining not rising. Alternative technologies, lower demand and a global glut of supplies means that access to fossil fuels should no longer be a priority for European diplomacy. Instead, diplomats must turn their attention to delivering a successful transition of fossil fuel producing countries, many of which rely on fossil fuels revenues to prop up their stability. In this context, European foreign policy needs to avoid promising future import demand which will not materialise, and reorient energy diplomacy towards sustainable and resilient investments.

Excessive oil price volatility is harmful for the economies of both producing and consuming countries. As we demonstrated in the Paris climate talks last year, Europe's commitment to a clean energy future is non-negotiable. Eliminating fossil fuels subsidies worldwide is certainly a step in the right direction. I look forward to discussing with OPEC countries how we can best work together to ensure the global clean energy transition.

- EU Commissioner for Climate Action and Energy Miguel Arias Cañete, 2016³⁸

The energy landscape has profoundly changed

Many of the energy assumptions underpinning European foreign policy strategies at the turn of the century were proved wrong. Access to cheap and reliable fossil fuels was amongst the primary drivers of EU and US foreign policy. According to the 2003 European Security Strategy, expectations were that Europe's fossil fuels dependence "will rise to 70% in 2030".³⁹ In contrast, fossil fuel imports have declined by over 10% since 2003. A strong increase in renewables and energy efficiency is driving a decline in fossil fuels consumption across Europe, with a drop of 20% over the past decade.⁴⁰

³⁸ High-level EU-OPEC meeting in Vienna, 21 March 2016

³⁹ European Council (2003), A secure Europe in a better world

⁴⁰ Eurostat and European Environmental Agency (2016), Renewable energy in Europe 2016

Similarly, the United States assumed in 2001 that “emerging technologies are not yet commercially viable to fill shortages and will not be for some time [...] the United States [...] may soon for the first time become reliant on sources outside North America for substantial amounts of natural gas”.⁴¹ Since its peak in 2007 gas imports have declined by over 40%, and since its peak in 2005 oil imports have declined by over 30%.⁴²

Today, access to fossil fuels is less of a threat, for a number of reasons. Oil and gas are cheaper and more plentiful than previously thought. Shale gas in the US has redefined US energy security and foreign policy priorities. Decarbonisation of the global economy is driving a “demand revolution” and reshaping energy, economic and power relations.⁴³ **The main issue around fossil fuels today is not dealing with scarcity, but ensuring an orderly transition – including managing the stability of both fossil fuel producers and of global markets.**

Globally, 52% of natural gas reserves, 35% of oil reserves, and 88% of coal reserves must be left in the ground to stay under 2°C.⁴⁴ This points to both lower volumes and lower prices for fossil fuel exporters in the context of a global energy transition.

Fossil fuel price volatility has already been a major risk factor of instability for both oil consumers and oil producing countries. Since the start of Arab Spring in January 2011 oil producers in the MENA region used high revenues from high oil prices to keep people off the streets. However, in September 2014 Saudi Arabia decided to protect its market share at the expense of the oil price, leading to a fall of over 70%.⁴⁵ As a consequence, many producing countries, such as Algeria, Libya, Russia, Azerbaijan, Venezuela, Colombia and Brazil, are now struggling to maintain fiscal and economic stability.

Europe needs to manage the transition of fossil fuels suppliers to stay safe

As the oil price tumbles, fossil fuel producers’ countries face the enormous stability challenge of managing falling revenues. Foreign reserves are central for meeting debt repayments and funding food and fuel imports. The domino effect of cutting subsidies, raising taxes, and increasing product prices will exacerbate the risk of political upheavals in countries without strong financial buffers. These include key EU supplier countries such as Russia, Algeria, Libya, Iraq, Azerbaijan and Saudi Arabia. For example, as the budget deficit hit a record \$98 billion or 15% of GDP in 2015, Saudi Arabia’s extensive foreign exchange reserves could run dry in about five years.⁴⁶

⁴¹ James A. Baker III Institute for Public Policy and the Council on Foreign Relations (2001), *Strategic Energy Policy - Challenges for the 21st Century*

⁴² US Energy Information Administration. See data for **Petroleum and other liquids** and for **Natural gas**.

⁴³ European Environmental Agency (2016), *Renewable energy in Europe 2016*

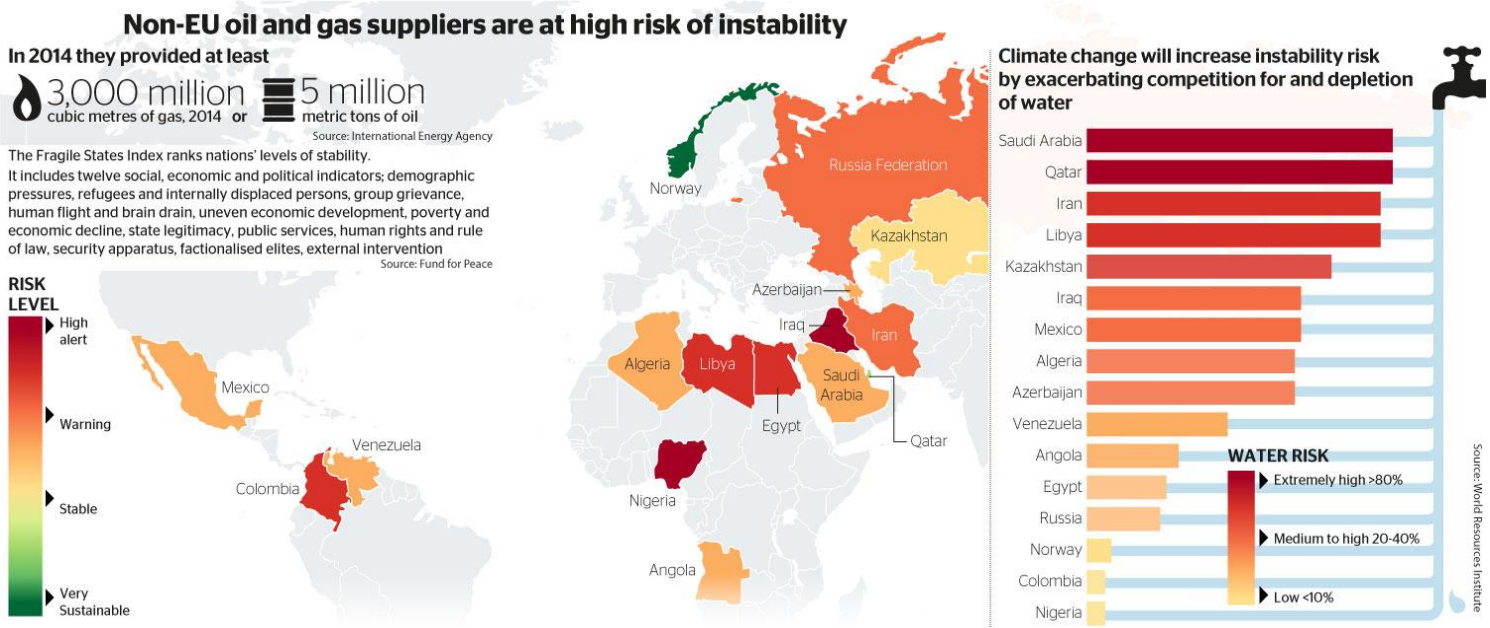
⁴⁴ C. McGlade and P. Ekins (2015), *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*

⁴⁵ P. Stevens (2016), *Why we should beware the dawn of cheap petrol*

⁴⁶ Financial Times (2015), *Saudi finances weaken as FX reserves slide*

Most of the non-EU fossil fuel suppliers are fragile states, with many ruled by repressive and autocratic regimes. They show poor records on democracy, civil rights, gender equality, media freedom, and development. The ongoing support of elite groups who use fossil fuels wealth to concentrate power and repress access to basic and fundamental rights poses a huge problem to European diplomatic credibility. In addition, many of these countries are highly exposed to climate change impacts, which will further exacerbate existing political, economic and social instability.

Figure 2: Instability of Europe's top oil and gas suppliers



Source: E3G based on IEA, The Fund For Peace and WRI

Europe has a strategic interest in a successful and orderly transition of fossil fuels producing economies yet current support is not well targeted. The financial and economic support packages from EU Member States have the potential to smooth the transition. It is important that investment decisions are based on realistic analysis.

- Europe's domestic and external decisions need to avoid building in instability by promising import demand that will not materialise as Europe cuts its dependence from fossil fuels. Instead, the EU should work together with fossil fuels producing countries to help diversify their economies and make them more resilient to future climate shocks. More needs to be done to shift investment priorities from high carbon to low carbon and resilient projects. For example, between 2003 and 2012 the fossil fuel and non-tradable sectors of MENA countries received twice the level of Foreign Direct Investment (FDIs) than the non-fossil fuels and commercial sectors.⁴⁷ Thus the region is vastly missing opportunities and failing to attract the high quality FDIs needed for resilient growth, jobs, and exports.

⁴⁷ World Bank (2013), Middle East and North Africa Economic Developments and Prospects

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- › **The EEAS should map out opportunities for sustainable investment under a broad range of future demand, price and climate shocks scenarios, and identify high value investments** which maximise the impact of external support.⁴⁸ The EEAS should also help suppliers countries stress-test their national development plans against a range of resource, energy and climate security scenarios. Studies should be commissioned for establishing Low Carbon Zones with links to EU trade as a potential driver of economic diversification and industrial development.⁴⁹
 - › A new approach to fossil fuels subsidies is needed. In September 2009 at the G20 summit in Pittsburgh the EU and the world’s other largest economies undertook the commitment to phase out fossil fuels subsidies.⁵⁰ This commitment was reconfirmed both by the US-EU Energy Council meeting and the G7 Energy Ministers in May 2016, who “encourage all countries to do so by 2025”.⁵¹ However, EU fossil fuels infrastructure are still a major recipient of public funding.⁵² **By the time of the next EU budget in 2021, the EU should phase out all fossil fuel subsidies from its budget and the EIB and EBRD should stop funding fossil fuels projects altogether.** This will build credibility by sending a strong signal that the EU takes agreed multilateral commitments and decarbonisation seriously.
 - › In addition, while the current focus of external actors, such as the International Monetary Fund and the World Bank, is on reducing fossil fuels subsidies in producing countries, there is scope for wider redistribution. Fiscal measures alone will not be sufficient to reduce the structural vulnerability of poor consumers and industries (and thus jobs) due to a lack of economic diversification and years of underinvestment. **A policy of recycling energy subsidies into targeted energy efficiency, new clean industries, and sustainable agriculture and water management policies** would improve social and economic stability and support stronger fiscal consolidation.

⁴⁸ For example, energy and water are key components of economic development, growth and social security. They are also decisive for agricultural production and hence food security. Investments in the areas of renewable energy systems, energy efficiency, water infrastructure, desalination and irrigation systems, therefore address some of the most pressing issues, such as energy poverty, economic underdevelopment and public health.

⁴⁹ Chatham House and E3G (2008), *Low Carbon Zones*

⁵⁰ G20 (2009), *G20 Leaders Statement: The Pittsburgh Summit*

⁵¹ EEAS (2016), *Joint Statement: U.S.-EU Energy Council* and G7 (2016) *Kitakyushu Energy Ministerial Meeting Kitakyushu Initiative on Energy Security for Global Growth Joint Statement*

⁵² Gas infrastructure has been a major recipient of public funding over the last decade, receiving several billions euro in grants and financial instruments from the EU budget, and tens of billions euro more in loans from the European Investment Bank. For a detailed overview and analysis see E3G (2013), *More security, lower cost: a smarter approach to gas infrastructure in Europe*

CHAPTER 4

INVESTMENT IN THE NEIGHBOURHOOD IS AN INVESTMENT IN EUROPE

Europe's security rests on its neighbours' long-term stability. If Europe wants to successfully stave off disorder in its neighbourhood, efforts need to address the root causes of instability. Climate change, the ultimate threat multiplier, is already undermining the conditions for stability. Europe's foreign policy efforts must be focused on implementing a clean energy, industry and diplomatic strategies that support sustainable growth and job creation, while providing the necessary financial resources.

While much has been achieved over the last decade, today an arc of instability surrounds the Union.

- European External Action Service, 2015⁵³

Instability is on the rise in Europe's neighbourhood

To the east, Russia has showed that inviolability of borders is no longer respected; its proactive involvement in Middle East affairs is re-establishing Russia as a major geopolitical player; and Russia's "gas pipelines politics" is dividing the European Union and polarising positions between Western and Eastern countries.

To the south, the unravelling of a century-old order in the MENA region is unleashing war, human suffering and the massive displacement of people. Five years ago, as the Arab Spring began, few European leaders could imagine that popular and largely non-violent demonstrations would be followed by the unprecedented wave of instability we face today. In 2015, over one million migrants and asylum seekers reached Europe via the Mediterranean, while at least 3,700 people lost their lives or went missing.⁵⁴

Further south – from the Sahel to the Horn, from the great Lakes to the Gulf of Guinea – instability and violence driven by poverty, conflict, corruption, human rights abuses and environmental degradation have exacerbated the magnitude of the global refugees crisis. At the end of 2003, the total population of concern to the UN Refugee Agency (those forcibly displaced worldwide) stood at 18 million persons. This number is now expected to have surpassed 60 million.⁵⁵

⁵³ EEAS (2015), *The European Union in a changing global environment*

⁵⁴ Human Rights Watch (2016), *Europe's Migration Crisis*

⁵⁵ UNHCR (2003), *Populations of concern to UNHCR, Global Report 2003* and UNHCR (2015), *Mid-year Trends 2015*

European societies are now faced with the huge challenge of the social, economic and cultural integration of the newcomers and the stabilisation of its neighbours. Failure to do so will put Europe's security and freedoms openly under threat as the terroristic attacks in Madrid, London, Paris and Brussels, as well as the ongoing wars in the Middle East, have shown over the past 15 years. This will also accelerate the rise of national populism in all Member States and drive fragmentation within the European Union.

Climate security is the pillar of stability

Climate change is the ultimate threat multiplier through second and third order effects.⁵⁶ These are stresses that are responsible for creating conditions of instability with dire consequences for the lifeblood of the human existence: food, water and energy security.

The intolerable increase of the price of bread prior to the Arab Spring, combined with a lack of government action to absorb the food price shock, drove hundreds of thousands people to the streets of Cairo and Tunis. The 2010 food price spike was due to a combination of factors, in particular crop failures in different parts of the world: droughts and wildfires in Russia which resulted in a ban on wheat exports, while flooding had destroyed much of Australia's wheat harvest. It is estimated that climate change made the extraordinary Russian heatwave of 2010 three times more likely, leading to a collapse of Russia's wheat harvest and a sharp rise of the price of wheat on global markets.

The compounded effects of growing demand from emerging markets, the increased use of fertile soils for the production of biofuels, and speculative bubbles in the agricultural market added to the situation. Repeated failure by governments to ensure their citizens' food, water and energy security undermine any residual legitimacy of regimes rife with corruption and unable to effectively address poverty and unemployment. In 2011 social grievances driven by a 30% increase in food prices quickly translated into popular unrest and eventually the toppling of the regimes in Egypt and Tunisia.

Prior to the civil war in Syria, the country experienced its worst years of drought on record, an astonishing four seasons (2006-2010). As many as 1.5 million people moved from the country's breadbasket region in the northeast to urban peripheries of the south. Temporary settlements composed largely of displaced rural people formed on the outskirts of Damascus, Hama, Homs, Aleppo, and Dara'a – the latter being the site of the first significant protest in March 2011. This migration flow exacerbated economic strains already caused by nearly 2 million refugees from neighboring Iraq and Palestine.⁵⁷

⁵⁶ G7 (2015), *A New Climate for Peace*

⁵⁷ *Bulletin of the Atomic Scientist (2012), Climate change and the Syrian uprising*

Investment in the neighbourhood can also benefit Europe

If Europe wants to succeed in staving off disorder in its neighbours and prevent future mass displacement of people, European leaders need to recognise and address the interlinkages between climate change, economic development, and security. Because the MENA region faces disproportionate challenges from climate change, investment and development strategies must directly address key vulnerabilities and focus on sustainable growth and jobs.

There is an opportunity to focus Europe's financial and economic support to help put Europe's neighbours on a more stable and sustainable development path, including integrating energy markets, deploying clean energy sources, and managing a rising energy demand. This will also help improve EU energy security and manage climate risk, and will create economic opportunities for European industries.

Better integration with our Northern, Eastern and Southern neighbours will enable Europe to tap into fast growing consumer markets and vast low carbon energy resources, save consumers billions through more interconnections, and safely balance the new energy system. For example, electricity demand in the MENA region is expected to increase at 6% per year by 2030. The region has also one of the highest potentials for solar and wind energy in the world. Concentrated solar power plants could generate 100 times the combined electricity consumption of MENA and Europe together; and with a wind speed of over 7 meters/second on the Atlantic and Red Sea coasts and some parts of the Sahara Desert, large-scale wind farms would already breach the threshold for economic feasibility.⁵⁸ Importantly, the lowest wind and PV prices are now to be found in MENA countries. Long-term prices for onshore wind in Egypt and for solar in Jordan are up to half the prices for projects in Germany.⁵⁹

In the new energy world, the EU's long-term energy security will depend more on its electricity networks and smart grids than it will on gas import pipelines. EU gas demand has already fallen by a fifth since 2010 and is expected to fall further as renewables and energy efficiency displace fossil fuels in line with the agreed 2030 and 2050 targets. As the heat and transport sectors become increasingly electrified there will be less and less need for imported gas and oil and their infrastructure.⁶⁰

- › **The EEAS and DG Energy should develop an “electricity interconnection and storage strategy” with the neighbours by the summer of 2017.** This strategy will inform future domestic needs and effectively manage Europe's and neighbours' infrastructure and investment choices. Numerous studies have shown the huge savings and security potential from increased interconnections and pumped hydroelectric storage with Norway,

⁵⁸ OECD (2013), *Renewable Energies in the Middle East and North Africa: Policies to Support Private Investment*

⁵⁹ IEA (2015), *Renewables in the MENA region*

⁶⁰ Diversified supply technologies scenario from Energy Roadmap 2050. See **European Commission (2011) Energy Roadmap 2050: Impact assessment and scenario analysis** Over time, electricity is expected to make up an increasing proportion of the EU energy system: projections from the European Commission indicate that electricity demand will increase by 14% by 2030 and 28% by 2050, even though energy demand as a whole, including gas demand, will fall by 30% to 2050.

Switzerland, the Western Balkan, Turkey, the Eastern neighbours, and North Africa.⁶¹ The focus on power export needs to be balanced with the need for more regional electricity market integration (South-South and East-East) which will improve the investment environment and energy security of the Southern and Eastern neighbours more dramatically in the short term.

- › **The EEAS should develop a “clean industry and technology diplomatic strategy” in cooperation with DG Energy and DG DEVCO for engagement with neighbouring countries.** This should focus on cost reductions and job creation through energy demand management, development of local supply chains, open trade and coordinated research and innovation. Political dialogues and regional activities should include commitments to deliver clean power trading, annual uptakes of energy efficiency savings in buildings and industry, projects for electric vehicles and clean public transport, and commissioning studies for establishing Low Carbon Zones as driver of sustainable industrial development.⁶²
- › **The EEAS should work in cooperation with DG ECFIN and DG FISMA to design and launch a new Strategic Investment Plan for a Sustainable Neighbourhood** based on a similar structure as the European Fund for Strategic Investment. What is needed to stabilise Europe’s neighbours is a regional effort on the scale of the Marshall Plan that will invest in resilient infrastructure, sustainable energy, communication, education and health. The fund should pool funding from the EIB, EBRD and contributions from national investment and development banks, and acts as a guarantee to support long-term, high value investment. The next Multiannual Financial Framework (post 2020) should include a earmarking of the EU budget within the Global Europe area specifically for the new fund.
- › In November 2015, the European Commission launched a €1.8 billion “Emergency Trust Fund for stability and addressing root causes of irregular migration and displaced persons in Africa”. **The Trust Fund should avoid investing in fossil fuels projects in the African continent and prioritise sustainable investment and resilient infrastructure. The EEAS should enhance its diplomatic efforts to attract funding from Member States and donors.**

⁶¹ See for example **ECF (2011), Roadmap 2050: a practical guide to a prosperous, low-carbon Europe** and **EC (2014) Study of the benefits of a meshed offshore grid in Northern Seas region**

⁶² **Chatham House and E3G (2008), Low Carbon Zones**

CHAPTER 5

CLEAN ENERGY MARKETS ARE MORE IMPORTANT THAN FUELS

The new energy economy is today at the heart of Europe's economic and energy security. As the energy transition accelerates, Europe's energy security, technological leadership and competitiveness will depend on clean investment, cost reductions, low carbon trade, and market growth to safeguard its future. Global low carbon trade should be at the core of EU energy diplomacy. EU institutions should help countries deliver and increase their INDCs and integrate climate risk and objective into all their infrastructure decisions in order to support the growth of sustainable markets.

We are living in the midst of a paradigm shift, some call it an "industrial revolution", a radical transformation of the way we live, interact, produce, consume, do business, commute etc. This is a fundamental change in the whole economy and a major opportunity for Jobs, Growth and Competitiveness.

- Vice President of the EU Commission for the Energy Union Maroš Šefčovič, 2016⁶³

Technological change is revolutionising international relations

Since the beginning of the 21st century, technological progress has fundamentally changed international and human relations, from the nature of conflicts to the way we communicate and share information, to the way we produce and consume energy. Change underway in the energy sector is critical because it will determine the level of climate risk that the world will collectively face. The way we produce, consume and share energy has enormous implications for the climate, economy and geopolitics. Over the past decade, Europe has shown that it is possible and profitable to reduce dangerous emission while preserving growth and competitiveness.

Greenhouse gas emissions in Europe fell by 24% from 1990 to 2014 – delivering its own 2020 climate target of 20% emissions reduction 6 years in advance – and by some estimates will fall by 30% by 2020.⁶⁴ This was driven mainly by the adoption of new clean technology, a strong reduction of energy demand through energy

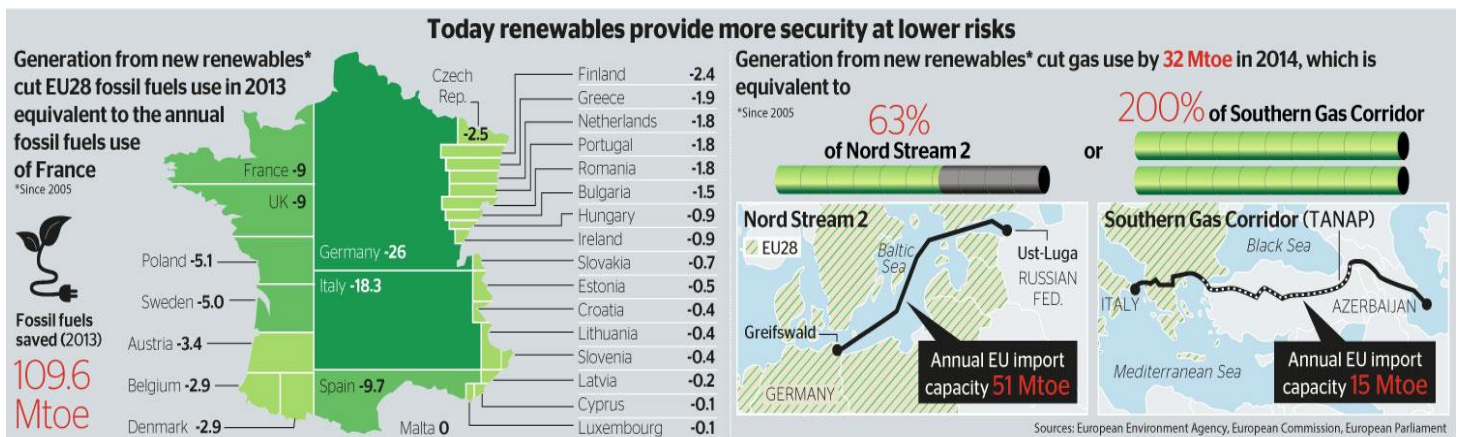
⁶³ Speech at the European Political Strategy Centre seminar on "The Energy Union and Climate Change Policy – A Transformative Agenda for the Modernisation of the Economy", 14 April 2016

⁶⁴ Sandbag (2015), Europe is on track for 30% emissions cuts by 2020

efficiency, and more connected markets through interconnections. Technological innovation has meant that over the past 5 years LED lighting saw cost reductions of 84%, electric vehicle batteries of 55%, solar PV of 50% and onshore wind of 18%.⁶⁵

The new energy economy is now at the heart of Europe’s economic and energy security. Since 2010 over €400 billion has been invested in clean energy across Europe providing employment to over 1 million people in 2014.⁶⁶ Between 2007 and 2011, this is before and after one of Europe’s worst economic crisis, “green” jobs rose by 20% totalling 4.2 million, proving the resilience of the industry to volatile markets.⁶⁷ In 2012, renewables saved EU citizens and businesses €400 billion in fossil fuels imports.⁶⁸ In 2013, renewables cut demand for fossil fuels by 110 Mtoe, equivalent to 9% of all fossil fuels used across the EU or to the annual fossil fuel consumption of France. In 2014, generation from new renewables installed over the past 10 years delivered gas savings equivalent to more than half the EU annual import capacity of Nord Stream 2, or to 200% that of the Southern Gas Corridor. This led to a reduction of CO2 emissions equivalent to the yearly GHG emissions of Poland.⁶⁹

Figure 3: Renewables in Europe, more security at lower risk



Source: E3G based on EEA, European Commission, European Parliament

Strong clean and efficiency policies are driving a “demand revolution” across Europe. While EU GDP has grown, electricity demand has fallen 1% per year since 2010; passenger road transport demand peaked in 2009 and is now down to the 2006 level; and gas demand has fallen 23% below its peak across all sectors (power, industry and buildings) and in almost all Member States.⁷⁰

⁶⁵ E3G (2015), EU Energy Union Assessment

⁶⁶ Bloomberg New Energy Finance (2016), New investment in clean energy in Europe Q1 2004 – Q4 2015 and EU Commission (2016), Over one million jobs in renewable energy

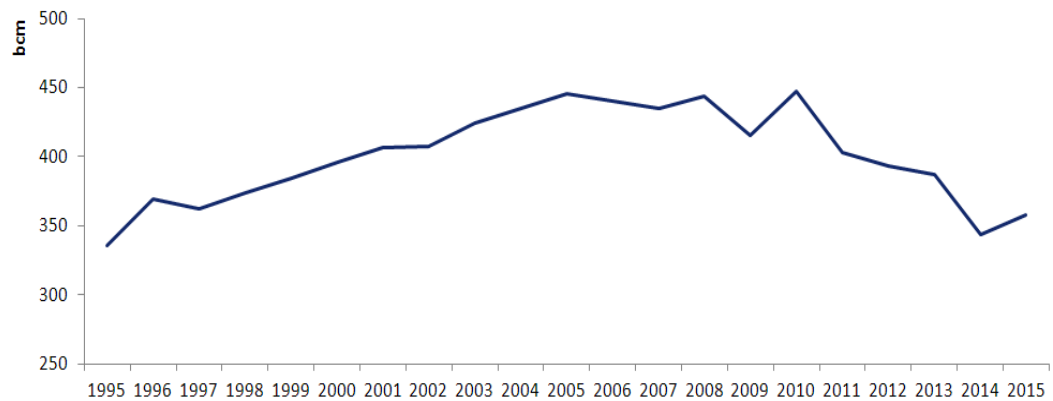
⁶⁷ European Commission (2014), Employment: Commission outlines measures to maximise job opportunities in the green economy

⁶⁸ EEA (2015) Renewable energy in Europe in 2015 and European Commission (2014), Energy – Sustainable, secure and affordable energy for Europeans

⁶⁹ EEA (2016) Renewable energy in Europe in 2016 Coal was the fuel most substituted (45% of all avoided fossil fuels), followed by natural gas (29% of all avoided fossil fuels)

⁷⁰ E3G (2015), Europe’s declining gas demand and EEA (2016), Passenger transport demand

Figure 4: Europe's gas demand from 1995 to 2015



Source: E3G based on Eurostat

Since 2003, gas transit through Ukraine to Europe has gone down by 53% and the share of Russian gas to Europe transiting Ukraine decreased from 80% in 2005 to 30% in 2014.⁷¹ Ukraine has dramatically improved its energy security by reducing its gas demand by almost half in 2014 compared to 2003 while decoupling its GDP growth from it. The main driver of decline was energy efficiency. As a consequence Ukraine managed to reduce its gas imports by two thirds and better interconnections have allowed Europe to become Ukraine's main gas supplier.⁷²

Global low carbon markets are an economic opportunity

As Europe faces a rapid energy transition, its energy security, technological leadership and competitiveness will depend on clean investment, cost reductions, low carbon trade, and market growth to safeguard its future. As the Paris Agreement points to a major upswing in the global market for clean-tech, ensuring open global markets in this area will be of key strategic importance.

The INDCs submitted in advance of Paris point to combined investment in renewables of at least \$2 trillion over the next 15 years.⁷³ Achieving the goals of the Paris Agreement will see investment in new renewable power generation increase 75% above business-as-usual. Capital costs for clean electricity generation (dominated by wind and solar) represents a \$12.1 trillion investment opportunity or \$485 billion per year over the next 25 years. The cost per unit of clean energy is due to decline consistently through the full 25 years, from an average of \$1.74/MW in 2015-2020 to \$1.03/ MW by the 2036-2040. While clean energy investments are on the rise, fossil fuel investments are dramatically falling: in 2015 alone \$380 billion worth of large-scale oil and gas projects were canceled.⁷⁴

⁷¹ EWI (2015), *The 2014 Ukrainian crisis: Europe's increased security position*

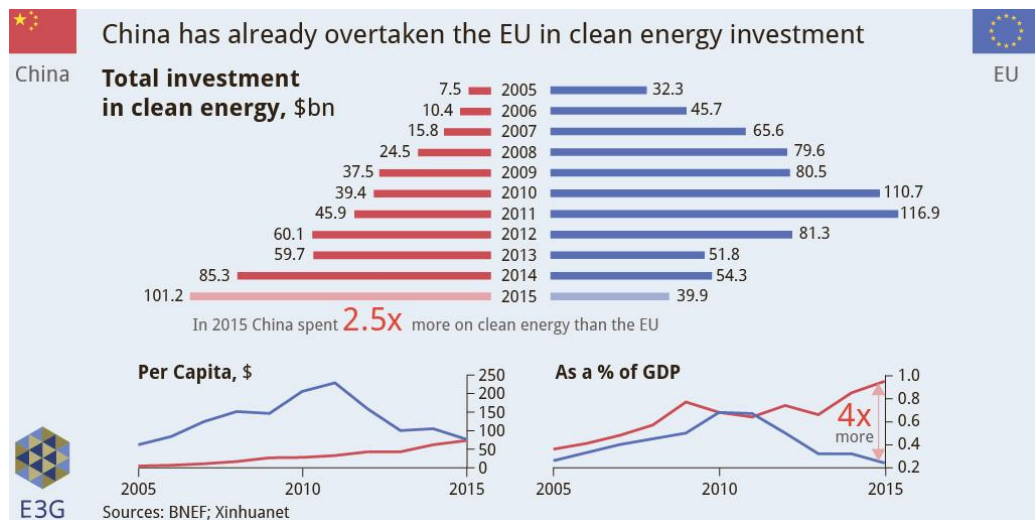
⁷² Analytica (2015), *Could Ukraine free itself from Russian gas?*

⁷³ Ecofys (2016), *Pathways from Paris*

⁷⁴ CERES (2016), *Mapping the Gap: The Road from Paris - Finance Paths for a 2-Degree Future*

Despite the growing opportunity, Europe is losing ground and is no longer the global engine for clean energy investment. In 2015, clean investment in Europe shrunk by 58% to \$46.3 billion compared to 2010 (\$110.7 billion), its weakest figure since 2006. In contrast, clean investment grew 4% globally, with China by far the largest investor with \$101.2 billion, an increase of 157% compared to 2010 (\$39.4 billion).⁷⁵ Clean energy investment in China are today more than twice as much as the EU's in absolute terms and the same as the EU per capita, with plans to deploy 3.5 times more wind power and 6 times more solar than the EU.⁷⁶ The EU is not only losing its position as a leader in clean energy technology, it is in danger of being left far behind.

Figure 5: China is investing over twice as much in clean energy than the EU



Source: **E3G**

The global market for low carbon goods and services is growing at over 4% a year and is expected to reach nearly €5 trillion in 2016.⁷⁷ The global market for smart grid technology alone is expected to grow to \$220 billion to 2020, and \$500 billion to 2030.⁷⁸ However, in 2012 Europe accounted for less than 10% of this market, behind the US (30%) and China (22%).⁷⁹ In addition to the revenue opportunities, the cost and environmental savings from increased use of Information Communications Technology (ICT) are considerable with \$4.9 trillion savings across sectors by 2030 leading a 20% reduction of global CO2 emissions. Use of ICT in energy, manufacturing, buildings, and mobility can lead to savings of \$1.1 trillion in reduced fuel expenditure, and \$1.2 trillion from reduced electricity use.⁸⁰

⁷⁵ BNEF (2016) Clean Energy Investment: Q4 2015 Factpack

⁷⁶ E3G (2016), China plans to dominate clean tech race

⁷⁷ UK's Department for Business Innovation & Skills (2013), Low Carbon and Environmental Goods and Services

⁷⁸ UK's Department for Business Innovation & Skills (2013), The Smart City Market: Opportunities for the UK

⁷⁹ Bloomberg New Energy Finance

⁸⁰ GESI (2016), ICT Solutions for 21st Century Challenges

In addition to clean energy, goods and service, \$90 trillion in infrastructure investment is needed globally by 2030 to achieve global growth expectations, equivalent to \$6 trillion per year. By 2020, the global market for smart transport is expected to grow to \$156 billion and that of smart water to \$22 billion.⁸¹ However, current annual global investment is less than half of what is needed and climate policy is insufficiently factored in investment decisions. These investment will largely determine the future of the climate system and thus of global security and prosperity. Europe has the capacity to be a global leader at building the smarter, cleaner and more resilient infrastructure systems that emerging and developing countries will need.

Europe needs access to clean markets to stay prosperous

Access to clean energy and infrastructure markets will determine Europe's security and competitiveness and should therefore have top priority in Europe's diplomacy. This means:

- › **Global trade in clean technology needs to become the core focus of EU energy diplomacy.** Diplomatic efforts should focus on cost reductions through development of global supply chains in clean technology, open trade in clean-tech and coordinated research and innovation strategies. Such a strategy should shape the EU's diplomatic engagement with both large energy consumers and energy producing countries, in the Clean Energy Ministerial, the G7, G20, and EU-China and EU-US Energy Summits.
- › **Diplomatic efforts should focus on maximising the impact of European climate finance on delivering the INDCs.** The EU climate diplomacy should aim to driving up ambitions for the five-year review process foreseen by the Paris Agreement and support financial reforms that redirect flows of public and private investment away from high risk, high carbon infrastructure towards low risk, low carbon and resilient infrastructure options.
- › To create opportunities for clean markets growth while preventing future climate disruptions, **the EEAS and Member State need to assist countries and international financial institutions to adopt two key principles for the integration of climate risk and objectives in national infrastructure choices:**
 1. **All infrastructure policies, plans and projects should build in resilience to the risks of climate changes projected during their lifetimes.**
 2. **All infrastructure policies, plans and projects should be consistent with countries' adopted INDCs, and able to be justified in the context of the agreed global goal – first championed by the EU – to keep global temperature increase well below 2°C and to pursue efforts to limit it to 1.5°C.**

⁸¹ UK's Department for Business Innovation & Skills (2013), *The Smart City Market: Opportunities for the UK*

CONCLUSIONS

STAYING SECURE IN A CHANGING CLIMATE

Europe's foreign policy interests have changed in the 13 years since the last European Security Strategy. As Europe's military and economic power diminishes, multilateralism becomes key to deliver European interests in an increasingly multi-polar world.

The Paris Agreement is a significant achievement in contemporary multilateral diplomacy and a success of European diplomacy. It gives hope that critical global issues can be solved collectively. The Paris Agreement makes us safer but not safe. Ensuring that it works is crucial to feed other multilateral efforts and to create a more cooperative foreign policy culture.

If left unmanaged, climate change will undermine European security and spread chaos outside its borders. Europe needs therefore to put a comprehensive climate risk management framework at the heart of its foreign policy strategy. Actively managing the transition of fossil fuels suppliers towards a sustainable growth model will provide them with a stronger buffer against fossil fuels price volatility as well as future climate shocks, while developing resilient job and industry markets. Tightening economic relations with neighbouring countries around clean technology and resilient infrastructure will provide the basis for prosperous and stable cooperation. Accessing global clean markets will safeguard Europe's energy security and technological leadership.

Managing climate risk and an orderly global transition should therefore become central threads running throughout European foreign policy.