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POLICY DEPARTMENT **A**
ECONOMIC AND SCIENTIFIC POLICY



Economic and Monetary Affairs

Employment and Social Affairs

Environment, Public Health and Food Safety

Industry, Research and Energy

Internal Market and Consumer Protection

TTIP Impacts on European Energy Markets and Manufacturing Industries

Study for the ITRE Committee



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT A: ECONOMIC AND SCIENTIFIC POLICY

TTIP Impacts on European Energy Markets and Manufacturing Industries

STUDY

Abstract

This study, provided by the Policy Department A at the request of the Industry, Research and Energy Committee (ITRE), aims to assess whether and to which extent European energy markets and manufacturing industries would be affected by the Transatlantic Trade and Investment Partnership (TTIP). Although the negotiations are currently on-going, the analysis shows that the TTIP will improve the EU's security of energy supply through adding liquidity and competition to the natural gas market. The TTIP will not directly lower either environmental or social legislation, but the study recommends the ITRE Committee to be aware of the potential for weakening of legislation implementation such as REACH and FQD.

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AUTHORS

Koen RADEMAEKERS, Triple E Consulting
Dr. Stephan SLINGERLAND, Triple E Consulting
Dr. Albert BRESSAND, Triple E Consulting
Prof. Gabriel FELBERMAYR, Triple E Consulting
Karl TÖRNMARCK, Triple E Consulting

RESPONSIBLE ADMINISTRATOR

Frédéric Gouardères
Policy Department A: Economic and Scientific Policy
European Parliament
B-1047 Brussels
E-mail: Poldep-Economy-Science@ep.europa.eu

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To contact Policy Department A or to subscribe to its newsletter please write to:
Poldep-Economy-Science@ep.europa.eu

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LIST OF ABBREVIATIONS

ACTA	Anti Counterfeiting Trade Agreement
AEO	Authorised Economic Operator
API	American Petroleum Institute gravity
ASEAN	Association of South East Asian Nations
ASME	US American Society of Mechanical Engineers
BCM	Billion Cubic Meters
BIS	Bureau of Industry and Security
BTL	Biomass To Liquid
CAPEX	Capital Expenditure
CBM	Coal Bed Methane
CEPR	Centre for Economic Policy Research
CETA	Comprehensive Economic and Trade Agreement
CNG	Compressed Natural Gas
CSI	Container Security Initiative
CTL	Coal To Liquids
C-TPAT	US Customs Trade Partnership against Terrorism
DOE	Department of Energy
EC	European Commission
ECOS	The European Environmental Citizens organisation
ECT	The Energy Charter Treaty
EEB	European Environmental Bureau
EHOB	Oil sands, Extra Heavy Oil and Bitumen
EIA	Energy Information Administration
EOR	Enhanced Oil Recovery
EPC	The European Patent Convention

ETUC	The European Trade Union Confederation
EV	Electric Vehicle
FDI	Foreign Direct Investment
FERC	Federal Energy Regulation Commission
FID	Final Investment Decision
FQD	Fuel Quality Directive
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GI	Geographical Indicator
GTL	Gas To Liquids
HLWG	High-Level Working Group on jobs & growth
IEA	International Energy Agency
IEC	International Electro
ILO	International Labour Organisation
IP	Intellectual Property Right
ISDS	Investor State Dispute Settlement
LCR	Local Content Requirement
LNG	Liquified Natural Gas
LTA	Liquefaction Tolling Agreement
LTO	Light Tight Oil
MFN	Trade Weighted Applied
NAALC	North American Agreement on Labour Cooperation
NAFTA	North American Free Trade Agreement
NATO	North Atlantic Treaty Organisation
NGL	Natural Gas Liquids
NTA	New Transatlantic Agenda

NTM	Non-tariff measure
OAPEC	Organisation of Arab Petroleum Exporting Countries
OPEX	Operational Expenditure
PMR	Product Market Regulation
PLG	Pressured Liquified Gas
QA	Qatar Petroleum
RCEP	Comprehensive Economic Partnership
REACH	Restriction of Chemicals Regulation
RVA	Revealed Comparative Advantage
SAM	State Aid Modernisation
SDO	Standards Developing Organisation
SME	Small and Medium sized Enterprise
SPS	Sanitary and Phytosanitary measures
TAFTA	Transatlantic Free Trade Agreement
TAP	Trans-Adriatic Pipeline
TBT	Technical Barriers to Trade
TEC	Transatlantic Economic Council
TEP	Transatlantic Economic Partnership
TFEU	Treaty on the Functioning of the European. Union
TPA	Third Party Access
TPP	Trans Pacific Partnership
TRIPS	Trade Related Intellectual Property Rights
TSCA	Toxic Substance Control Act
TTIP	Transatlantic Trade and Investment Partnership
USTR	The Office of the United States Trade Representative
WIPO	The World Intellectual Property Organisation
WTO	World Trade Organisation

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EXECUTIVE SUMMARY

Background

The US is the EU's most significant trading partner: the bilateral trade accounts for circa EUR 800 billion per year (in both directions), with a surplus for the EU of EUR 225 billion. Machinery and transport equipment, chemicals and "other" products dominate the trade flow. Tariffs between the EU and the US are in general very low and average around 3%.¹ The main barriers to trade are the existence of so called non-tariff-measures (NTMs). These can exist in many different forms, such as technical barriers to trade (different regulations, certification and standards), customs procedures or labelling requirements. The main purpose of the Transatlantic Trade and Investment Partnership (TTIP) is to remove NTMs. This is expected to result in an increase in trade, competition and GDP on both sides of the Atlantic.

The negotiations started in July 2013 and the 7th round has recently been completed. The process has so far, apart from a few leaked documents and position papers, been very secretive and only small quantities of information have been communicated to the public. This has caused a lively debate concerning the potential outcome of the agreement. Different environmental, labour and civil rights organisations have voiced their concerns regarding both the potential outcomes of the negotiations, as well as the lack of transparency. The European Commission has repeatedly stated that a certain level of secrecy is necessary, but that there will be no compromise on either environmental or social welfare issues for the sake of increased trade.

The Commission has based its rationale for the TTIP on a report "*Reducing Transatlantic Barriers to Trade and Investment - an Economic Assessment*" prepared by the Centre for Economic Policy Research (CEPR). The report uses quantitative modelling to calculate the outcomes of the agreement in terms of change in industry output, exports and GDP. As it is mainly a quantitative study, it does not address some important elements of the debate. For example, the implications on export restrictions, competitiveness and labour markets are not assessed.

Objectives and methodology

The lack of transparency in the negotiations in combination with the uncertainties regarding the projected outcomes results in a large information gap surrounding the impacts of the TTIP. Therefore, the main purpose of this report is to fill this gap, in areas particularly relevant for the ITRE committee. This is done through a literature review, expert knowledge and interviews. The general questions we aim to answer are:

- What would the impact be of the TTIP on trade and competitiveness of the EU?
- Would it affect security of energy supply, internal markets and policy, or renewable energy sectors?
- What would the impact be on the labour market and on innovation in the manufacturing industries?

¹ CEPR 2013.

Energy sector

The EU is extremely dependent on imported fossil fuels and energy security has once more become an important topic, as a result of the developments of the Russia-Ukraine crisis. Both crude oil and natural gas are imported in large quantities, which have a negative impact on the trade balance. Currently, the only energy sources traded in significant amounts between the EU and the US are solid fuels and refined petroleum products. There are no tariffs applied on EU energy imports. The US has during the latest decade become more reliant on domestic energy supply, mainly due to the "shale-gas revolution". Through technology developments in horizontal drilling and hydraulic fracking the country has been able to access its vast reserves of unconventional gas. The EC has repeatedly called for the inclusion of a chapter on energy and raw materials in the TTIP, with the purpose of gaining access to US crude oil and natural gas resources. These are currently restricted due to export bans. US officials have remained non-committal on this topic, claiming they are not sure what the EU wishes to achieve.

Through a combination of policy and economic analysis, we assess the implications of the TTIP on US export restrictions. First of all, **we do not foresee a removal of the ban on crude oil exports as a result of the FTA.** It was initially implemented after the OPEC oil-embargo in 1973, and apart from two narrow exceptions (Mexico, Canada) it has not been relieved by other bilateral agreements. In addition, public opinion in the US is generally negative towards exports, as it is likely that they would increase the price of gasoline.

Natural gas exports (LNG) from the US are not likely to increase to a large extent. This is due to a variety of reasons. First of all, companies wishing to export LNG to non-FTA countries have to apply to two government bodies, the Department of Energy (DoE) and the Federal Energy Regulatory Commission (FERC), who, in a costly and time-consuming process have to assess whether exports are in-line with national interests. The amount of LNG allowed to FTA countries, is 1.12bcm/day and to non-FTA it is 1bcm/day. If the TTIP is signed, European companies would gain FTA status, and be given quasi-automatic approval for LNG imports, hence avoiding the lengthy approval procedure. However, analysis shows that even under these conditions, US LNG exports to the EU are unlikely to increase to a large extent. This is due to growing demand of natural gas in emerging economies in the Asia Pacific region. Spot prices on these markets are significantly higher than in Europe, making them more attractive targets for US companies wishing to gain maximum profit. Moreover, the approval process for non-FTA countries is being simplified, further eliminating the comparative advantages of the EU gaining FTA status.

Due to the current market conditions, the TTIP will not lead to an increase in oil and natural gas exports from the US. Therefore, the **TTIP is not likely to have an adverse effect on the competitiveness of European industries in terms of lower electricity costs.** However, the TTIP could have a **positive effect on energy security**, if it leads to additional diversity of supply in the EU energy market.

With regard to the potential exploration of natural resources on both sides of the Atlantic, **access can be expected to improve.** The TTIP can simplify the mobilisation of companies overseas by harmonising legislation for Foreign Direct Investment (FDI), making it easier for EU companies to invest in the US and vice versa. Regarding energy trade, due to climate policy, it might be difficult to remove all NTMs, as for example the Fuel Quality Directive (FQD) sets different carbon value on fuels depending on what source they are derived from. This would restrict fuels processed from tar sands. However, some

have proposed setting a default value for crude oil, effectively removing the FQD as a barrier to trade.

The inclusion of the highly controversial **Investor-state dispute settlement (ISDS)** mechanism in the TTIP is currently under debate. Originally, the EC was in favour of this type of provisions, but an intense public debate caused a change in discourse. Commissioner designate for Trade Cecilia Malmstrom has communicated the possibility of the ISDS being excluded from the agreement. It is important to note that the Commission has not made a final decision on the matter and we urge the ITRE committee to follow up on these developments. However, even if the ISDS is excluded from the TTIP, US multinational companies still have the possibility of using the mechanism through their European subsidiaries. The issue of ISDS is already evident in Europe, applied between member states through the Energy Charter Treaty.

Through the removal of local content requirements (LCR) **trade in renewable energy technologies is likely to increase**, which would be particularly beneficial for the EU wind energy manufacturing sector. We foresee many possibilities for harmonisation without lowering environmental standards regarding finding convergence in Eco Design and energy labelling schemes. However, there are concerns regarding the recognition of US requirements, which could potentially undermine the European standardisation process.

Manufacturing industries

Import tariffs on manufacturing products are in most cases very low, with an average of 3 %. The exceptions are for processed foods (14.6 %) and motor vehicles (10 %). As much as 80 % of the total potential gains of the TTIP, are expected to come from removing NTMs, which would have an adverse effect on European industries in the form of increased competition and market access. The aerospace industry accounts for the highest NTMs for both the parties, followed by chemicals for the EU and machinery for the US.

The CEPR report has made two projections for the manufacturing industry:

1. An ambitious comprehensive trade liberalisation scenario with the removal of 25 % of NTM costs and 100 % of the tariffs.
2. A less ambitious scenario including 10 % NTM removal and 98 % tariff reduction.

In both cases, **an average increase in output is expected from the manufacturing industries**. Motor vehicles, "other manufacturers" and processed foods are likely to gain the most. However, not all sectors will benefit from the agreement. Electrical machinery along with metal and metal products are likely to see a decrease in output. The latter of the two is an energy intensive industry and faces stiff competition from US manufacturers with lower energy and labour costs. These are factors that the EU has difficulties changing and it must therefore build its competitiveness based on other strengths.

The TTIP will not bring equal benefits to all member states. It is logical that the effects are likely to be more positive for countries already strongly involved in transatlantic trade such as Sweden, the UK and Ireland while gains in France, Hungary and Austria will be below the EC average. The US economy will benefit more in terms of change in GDP than Europe.

The effects for SMEs are likely to be positive, especially for those wishing to enter the global market. The relative costs of NTMs are higher for SMEs than for larger enterprises, as they both need to meet the same requirements regardless of what quantity is sold. In some cases, it might even be so difficult and costly for SMEs to comply with different standards and regulation that they will not be able to export certain products.

EU jobs and the social welfare model are not likely to be compromised. Apart from provisions on improving the movement of skilled labour, our analysis does not foresee any part of the agreement which could affect the high level of protection for workers in the EU. The TTIP will increase pressure on some manufacturing industries which are not as competitive as their US counterparts with regard to energy and labour costs. However, there is no reason to believe that this will lead to lower labour standards. Many EU manufacturers remain competitive due to other factors, such as producing innovative products with a high added value. In fact, **wages will increase** for all skill levels of the workforce which leads to a higher annual average income per household of EUR 545 in the EU and EUR 655 in the US.

Due to similar skill levels, we do not foresee any 'brain drain' or 'brain gain' as a result of the TTIP.

Innovation is likely to benefit from the TTIP, as companies gain access to larger markets allowing for an increase in revenue which can be re-invested in R&D. This is the main reason why innovation companies are global, particularly those with high expenditure in product development and low marginal costs.

Intellectual property rights could be at risk, with particular concern being attached to EU Geographical Indicators (GIs) which are opposed by US trade officials. European products such as wines, spirits and food products roughly add EUR 30 billion in value to EU sales. Therefore, the EC has ensured that GIs have been protected in other FTAs.

The TTIP provides some opportunities to reindustrialise the EU through increased competitiveness of its industries. However, the opportunities are not likely to be durable, given that neither labour nor energy costs are likely to reduce, given the continued attractiveness of economies in the Asia Pacific region. Furthermore, the US is currently engaged in other FTA discussions which could undermine the benefits of the TTIP.

Conclusions

The impact of the TTIP is likely to be positive for most manufacturing industries, with an increase in GDP in the EU member states. The agreement is however not likely to increase energy security in Europe, as these resources are restricted by factors that are decided independently of the TTIP.

Policy recommendations

Even though the TTIP is not likely to bring any direct change in environmental protection, it can still change the way in which they are implemented. The new proposal of the FQD is a great example, where all fuels would be given a default value regardless of their origin. This would benefit US producers wishing to export fuels derived from tar sands.

We urge the ITRE committee to analyse the ISDS mechanism, and consider if its benefits outweigh its potential drawbacks which could potentially restrain national sovereignty.

With regard to European jobs, we advise pre-emptive action towards the sectors that are likely to decrease their output with consequent impacts on their workforce. Also, given that the TTIP does not change the fundamental competitiveness issues of the EU's energy intensive industries, we recommend a continued pursuit of the Europe 2020 targets with their focus on innovation, energy efficiency and adding high value to products. These are important drivers of EU competitiveness. Finally, we call for a re-estimation of TTIP projections, when the details of the final agreement are clearer in order to show what barriers are still in place and give a more accurate assessment of the changes in GDP.

1. INTRODUCTION

This Chapter introduces the background and objectives of this study, as well as the method used. It also provides a reading guide for the study.

1.1. Background

A 'Transatlantic Trade and Investment Partnership (TTIP)' is currently being negotiated between the European Union and the United States. The US is the number one export destination for the EU. Despite the economic downturn and the emergence of other major economies, the EU and the US are still the world's largest economic entities representing over 45 % of total world GDP in 2012 in current dollars². Their share of total global exports is 25 %, while they account for 31 % of imports³.

Overall, the EU exports more to the US than it imports, leading to a positive trade balance of EUR 92 billion in 2013. (table 1-1) The machinery equipment and chemical industries are the two most significant trading sectors between the EU and US. Raw materials and mineral fuels are the sectors with the largest imports.

Table 1-1: Overall trade statistics EU- US⁴

Direction of trade	Goods (2013)	Services (2012)	Investment (2012)
EU to US	EUR 282.2 billion	EUR 163 billion	EUR 1 655 billion
US to EU	EUR 196 billion	EUR 148.9 billion	EUR 1 536.4 billion
Trade balance EU	+ EUR 92.2 billion	+ EUR 14.1 billion	+ EUR 118.6 billion

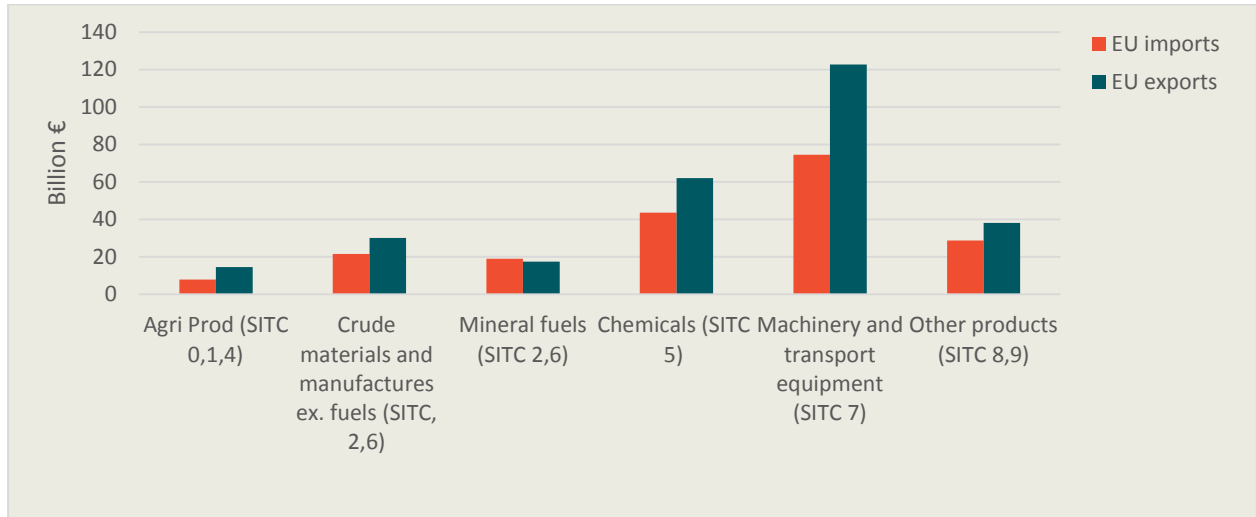
Key impacts of the TTIP on the European Union are to be expected in the areas of energy and manufacturing industries, as existing trade flows between the US and the EU are already large in these areas and are likely to remain so in the future. In 2013, exports of mineral fuels from the EU to the US amounted to some 17 billion euros, and imports to 19 billion euros. Exports of chemicals, machinery and transport equipment jointly amounted to some 185 billion euros, imports to 118 billion euros (Figure 1-1). Hence, the energy sector accounted for approximately 10 % of total EU imports of goods from the US in 2013 and the manufacturing industry, defined here as the sum of the chemical, machinery and transport equipment sectors, for some 41 % of exports of goods. The figure also illustrates that, whereas imports and exports between the US and the EU in the energy sector are more or less in balance, EU exports in the manufacturing sector by far exceed the imports. The trade in services is also substantial, with professional and technical services amounting to roughly 45 million, followed by transportation with 33 million.

² http://transatlantic.sais-jhu.edu/publications/books/TA2014/TA2014_Vol_1.pdf.

³ Also 2012. http://transatlantic.sais-jhu.edu/publications/books/TA2014/TA2014_Vol_1.pdf.

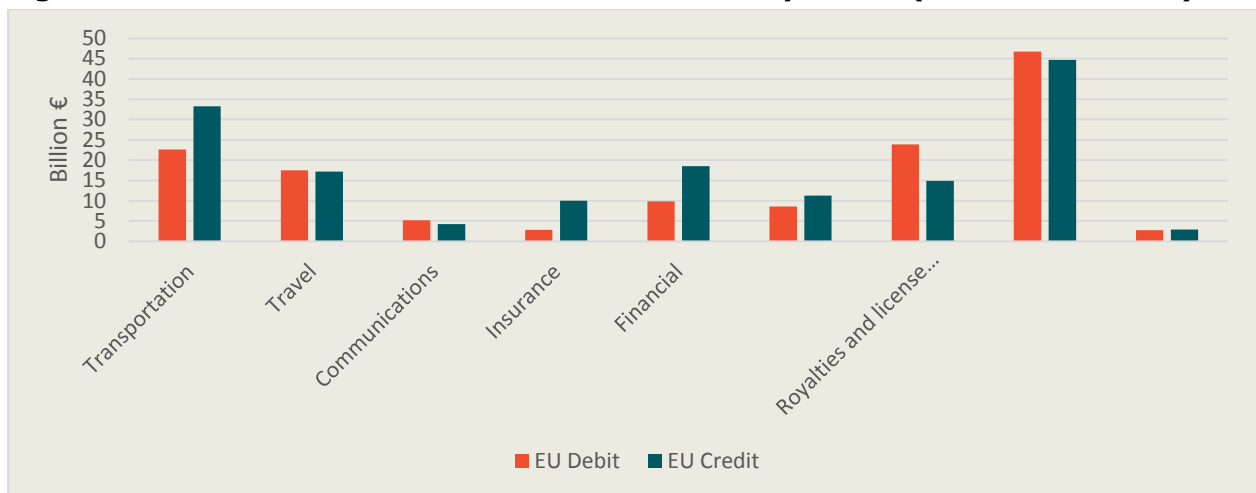
⁴ Ibid.

Figure 1-1: EU trade in goods with the US by sector (EUR million 2013)



Source: Eurostat.

Figure 1-2: EU trade in services with the US by sector (EUR million 2012)



Source: Eurostat.

Increased EU import of services is offset by rising export of services, allowing for an improved trade surplus with the US. However, together they accounted for 56.7 % of global inward stock of Foreign Direct Investment (FDI) and 71 per cent of outward stock of FDI. As a majority of stock is invested in each other’s economy, mutual FDI is the main driver for their position as each other’s main trading partner and the links between the prosperity of the US and EU.. Over the past decades Europe has been the main destination for US FDI. European investments in the US have decreased over the past few years, as companies downsized their global operations or sent capital home. Table 1-2 shows the 2012 levels of FDI.

Investments can be promoted in a variety of ways such as through Investor State Dispute Settlement (ISDS). This is considered a controversial mechanism and subject to public debate. The inclusion of ISDS in the TTIP agreement is still unsure. However, the TTIP is likely to include other measures which are beneficial for investment. For example, it would establish principles of non-discrimination, most-favoured nation treatment, fair and equitable treatment and compensation after expropriation. It would apply pre establishment (investment liberalisation) and post establishment (investment protection).

How disputes are settled is in principle independent from these points; alternatives could be state-to-state dispute settlement mechanisms.

Table 1-2: Foreign Direct Investment 2012

Foreign Direct Investment 2012, EUR billions			
Year	EU Inward stocks	EU Outward stocks	Balance
2012	1536.4	1655.0	118.6

The potential impacts of the TTIP on the energy sector and manufacturing industry are currently subject to lively political debate in the EU, which is partly caused by the secrecy of the negotiations⁵. The main questions which are being asked include: What would be the impact of the TTIP on the trade levels and competitiveness of the EU? Would it affect security of supply, internal markets and policy, or renewable energy sectors? What would be the impact on the labour market and on innovation in the manufacturing industries? A number of issues have already been subject to public discussion, such as tar sands, the EU fuel quality directive and whether or not the projected benefits of the TTIP on EU industries are exaggerated.

From the discussions it is clear that, whereas some stress the potential positive effects to the EU, others are more concerned with the potential negative effects on the EU economy and society. This study therefore tries to analyse the potential impacts of the TTIP on the EU energy sector and manufacturing industry in more detail.

1.2. Objectives

Several relevant topics have been identified in order to analyse the impacts of the TTIP on the EU energy sector and manufacturing industry in more detail. In the energy sector, the main topics that will be discussed are the potential impacts of TTIP on trade and competitiveness in general; on security of supply; on market access; on the internal market; on renewable energy and on energy efficiency sectors. For the manufacturing industry, trade and competitiveness impacts in general will be discussed as well as the likely impacts on specific sectors. Further topics to be examined here are possible implications for the internal market, jobs and labour policies and innovation (Table 1.3).

Table 1-3: Main topics regarding potential impacts of TTIP on the EU energy and manufacturing sector

Energy		Manufacturing industries	
	Trade and Competitiveness general		Trade and Competitiveness general
1.	What would the impact of TTIP be on transatlantic trade of energy goods and services?	1.	Would a new framework for raw materials and energy trade boost EU competitiveness?
	Security of Supply	2.	Which manufacturing sectors would benefit, which ones would not?
3.	Are mechanisms envisaged to handle energy supply crises?	3.	Will the TTIP provide a fair distribution of benefits across the Atlantic?
4.	Would the US export restrictions on crude oil be removed?		Trade and Competitiveness specific industry sectors

⁵ <http://www.euractiv.com/sections/trade-industry/frances-latest-calls-ttip-transparency-fall-deaf-ears-308652>.

Energy	
5.	Would natural gas exports from the US to the EU significantly increase?
	Market Access
6.	What would the consequences be for EU and US companies access to the exploration and production of energy resources on the other side of the Atlantic?
7.	Would full market access be granted?
	Internal energy markets
8.	Would the choice of a country to allow or restrict the exploitation of its energy resources be affected (for instance via investor-state)?
9.	What would the impact be on the access to infrastructure for transport of energy goods (natural gas pipelines, electricity grids, etc.)?
	Renewable energy and energy efficiency sectors
10	What could the implications be for transatlantic trade in sustainable energy technologies (for instance in the energy efficiency and renewable energy sectors)?
11	What would the convergence of regulatory standards mean for the sustainable energy sectors?

Manufacturing industries	
4.	What could the implications be for the EU energy intensive industries?
5.	What could the implications be for SMEs?
	Internal market and administrative burdens
6.	What would the consequences be for EU public interventions such as state aids?
7.	To what extent would elimination of tariffs reduce administrative burdens for import and exports?
	Jobs and labour policies
8.	Will EU jobs and the EU model of social welfare be under jeopardy?
9.	What could the implications be for high-tech and skilled workers?
10	Do we foresee a brain-drain or a brain-gain?
	Innovation and longer-term impacts
11	To what extent could the development of new international standards boost innovation in the EU?
12	Will intellectual property rights be at risk?
13	Will the TTIP provide some durable opportunities for reindustrialising the EU?
14	What kind of risks could be identified in the medium / long term for EU industry?

1.3. Method

The discussion topics outlined above have been addressed in this report via literature review, supported by the insights of two expert reviewers, one on the energy sector and

one on the manufacturing industry⁶. Furthermore, several interviews were carried out in order to fill gaps in the knowledge available from literature.

The answers to the questions reflect the available facts and figures on the topic, as well as an overview of stakeholders' opinions where relevant. Based on an assessment of these facts, figures and opinions, we give our expert view on each question. Our overall view on the likely impacts of TTIP on the EU energy and manufacturing sectors is given in the final chapter.

1.4. Reading guide

This report is divided into five different sections. Each chapter begins by providing background information on the topic, followed by analysis and ending with a general conclusion.

Chapter one provides information regarding the background, rationale and objectives of this study.

Chapter two, includes a description of the past and present characteristics of EU-US trade and the TTIPs relation to other Free Trade Agreements. The chapter also describes the timeline of the negotiation process and what topics that will be discussed by EU-US trade representatives.

Chapter three elaborates on the impact of TTIPs for the energy sector. It begins by explaining the current state of transatlantic trade in energy goods, followed by a general analysis of the TTIPs impact on this sector. Thereafter we explain the interaction between the TTIP and Europe's security of energy supply, with special attention to the potential of crude oil and natural gas exports. Chapter three also includes analysis on market access and the implications for sustainable and renewable energy technologies.

Chapter four focuses on how the TTIP would affect Europe's manufacturing industries. It begins with a general introduction where we explain the tariffs and non-tariff barriers to trade. This is followed by an analysis of the impacts on trade and competitiveness for the different industries, the implications for SMEs and the distribution of effects between the member states. The chapter also analyses the impacts on administrative burdens, internal markets and jobs. We also assess the effects on innovation, intellectual property rights and the long-term potential of the TTIP.

Chapter five provides general conclusions and reflections from the report along with a series of policy recommendations to the ITRE committee.

⁶ Prof. Albert Bressand (Columbia University, Groningen University) and Prof. Gabriel Felbermayr (Ifo Center for International Economics at the University of Munich.).

2. TTIP NEGOTIATION PROCESS

This chapter gives an introduction to the TTIP negotiation process. We will first put the TTIP in the context of previous and other regional trade negotiations; we then discuss what is known of the TTIP negotiations so far.

2.1. Context of the negotiations

2.1.1. Brief history of EU-US trade negotiations

In the past, both the European Union and the United States showed an interest in the establishment of a trade and investment partnership. However, so far, political momentum has not been sufficient to conclude a comprehensive agreement. In 1995, the **New Transatlantic Agenda (NTA)** was established in Madrid by representatives from the EU and the US, in order to strengthen the transatlantic economic relations. The NTA became a framework for frequent and structured dialogue between both trading blocs, resulting in the establishment of the **Transatlantic Economic Partnership (TEP)** in 1998 in London. The main aim of the partnership was to improve cooperation between the two trading blocs, but few tangible results were achieved.

In 2002, "**Guidelines for Regulatory Cooperation and Transparency**" were adopted and designed to improve the dialogue between regulatory policy makers in the EU and the US, in order to reach a certain degree of compatibility of standards. At a 2004 summit in Shannon, Ireland, representatives of the EU and the US agreed on the "**Strategy for Strengthening EU-US Economic Partnership**". The objective of this was to increase public engagement on transatlantic economic cooperation. The Shannon summit led in 2005 to the establishment of the "**Initiative to Enhance Transatlantic Economic Integration and Growth**".

To stimulate economic policy coordination between both trading blocs, the **Transatlantic Economic Council (TEC)** was set up in 2007. In spite of its mandate, the TEC was unable to achieve tangible results. Therefore, as of 2011, the dialogue between the EU and the US was continued under the leadership of US Trade Representative Ron Kirk and EU Trade Commissioner Karel de Gucht in the **High-Level Working Group on Jobs and Growth (HLWG)**. This group studied both tariff and non-tariff measures, the possibility of regulatory policy coordination and gave the go-ahead for negotiations on the establishment of a comprehensive partnership between the EU and the US.

Since 2013, the European Union and the United States have been negotiating a **Transatlantic Trade and Investment Partnership (TTIP)** also known in the United States as the **Transatlantic Free Trade Agreement (TAFTA)**. The agreement aims at stimulating economic growth and the creation of jobs on both sides of the Atlantic Ocean. The main topics include the removal of tariff and non-tariff measures such as technical and safety standards, license obligations, lengthy customs procedures, restrictions on access to public tenders and trade restrictions on products and services in a variety of fields.

2.1.2. The TTIP in relation to other free trade agreements

To date multilateral trade agreements have mainly been negotiated through the World Trade Organisation. However, with the Doha Development Round lasting for more than a decade without major breakthroughs, a notable shift can be seen towards bilateral agreements and Free Trade Agreements (FTAs). Besides the TTIP, two other large FTAs are currently being negotiated namely, the **Trans-Pacific Partnership (TPP)** between

among others the US, Mexico, Australia, Singapore and Malaysia and the **Regional Comprehensive Economic Partnership (RCEP)** involving the Association of South East Asian Nations (ASEAN), China, Japan, India, Australia, New Zealand and South Korea. Each of these FTAs has the potential to become a game-changer in the global economy as they involve large trading blocs.

2.1.3. Timeline of the TTIP negotiations

The current TTIP negotiations started in July 2013. Up to October 2014, seven rounds of negotiations have been concluded. Alongside every round of talks, the negotiators met with approximately 350 EU and US stakeholders from business-, labour- consumer- and environmental interest groups to obtain their input and provide information on the procedure and scope of TTIP negotiations.

Box 2-1: The TTIP negotiations in 2013 and 2014

July 2013

In July 2013, the first round of negotiations took place in Washington D.C. During this initial round, twenty-four working groups were established each covering an issue that falls within the scope of TTIP.

October 2013

Due to the US government shutdown, the second round of negotiations planned in October 2013 in Brussels, was rescheduled to November 2013. Negotiators built on the steps taken during the first round of talks in Washington and discussed their respective approaches to specific trade and investment issues as well as areas of potential convergence.

December 2013

The third round of talks was held in accordance with the planned negotiation timeline scheduled from 16 to 20 December 2013 in Washington DC. According to US lead negotiator Dan Mullaney, in this round, work began on “the architecture of an agreement”. Progress was made on the core parts of the TTIP: market access and regulatory aspects (for example sanitary and phytosanitary regulations in relation to food safety). In addition, negotiators discussed potential cooperation in particular sectors: investment services, government procurement, labour, SMEs, energy and raw materials, intellectual property, localisation, legal and institutional and state-owned enterprises.

March 2014

During the fourth round of talks, held in Brussels from 10 to 14 March 2014, negotiators went into further detail on the proposed trade deal in several areas. While earlier rounds were characterised by productivity and ended in a positive mood, this round of talks was characterised by less optimism – as expressed by US trade representative, Michael Froman, merely saying he was “generally pleased” with the progress.

May 2014

In May (19-23 May 2014), the fifth round of negotiations were held in Arlington, Virginia. During this round of talks, the full range of topics was discussed. In most negotiating areas (among others, tariffs, services, investment and government procurement), the proposed agreement wording was discussed. With regard to standards and regulations, steady progress was made.

July 2014

During the sixth round of talks (from 14 until 17 July 2014), the parties worked on three overarching themes; market access, the regulatory component and rules, principles and modes of cooperation. With regard to market access, the negotiators worked on the basis of a consolidated text to reduce divergences and made initial tariff offers for various sectors and liberalisation offers for services and investment. In the area of regulatory measures, the parties exchanged non-papers addressing their respective objectives, discussed earlier tabled proposals for lowering technical barriers to trade and a US proposal for the text of the coherence chapter. As for the third subject, rules, principles and modes of cooperation, a round table discussion was held about energy and raw materials in which the parties exchanged views and information on their respective regulatory frameworks. In addition, among others, trade and sustainable development/labour and environment, competition, intellectual property rights/geographical indications and small and medium sized enterprises were discussed.

Sept-Oct 2014

The seventh round of EU-US negotiations took place in Chevy Chase (Maryland, US) from 29 September until 3 October 2014. During this round, the focus was on the 'regulatory pillar' (standards, strategic dimension and compatibility), in terms of horizontal disciplines (regulatory coherence, application of sanitary and phytosanitary measures (SPS), technical barriers to trade (TBT)) as on specific sectors (pharmaceuticals, cars, chemicals or engineering). EU negotiator Ignacio Garcia Bercero said after the event that 'regards horizontal disciplines, we are now fully engaged in discussions based on textual proposals' and 'on sectors, technical work is making steady progress in identifying concrete outcomes that save unnecessary duplications while fully respecting the mandates of our regulators'. The EU delegation also clearly stated that on standards 'nothing will be done which could lower or endanger the protection of the environment, health, safety and consumers'. This was reaffirmed by Commissioner-designate Malmström during her European Parliament hearing. An important point for this study is that under the 'rules pillar', energy and raw materials were discussed. However, no further information has been released yet.

Whereas initial hope was that the trade deal could be concluded before the end of term of EU Trade Commissioner Karel de Gucht on 1 November 2014, Angela Merkel, Chancellor of Germany, remarked during her visit to the United States, that 'the US and the EU must be able to forge a trade deal by the end of next year'⁷. Hence, if no delays occur, a TTIP agreement might be expected in 2015.

2.2. Negotiation process so far

The TTIP negotiations have been secret and initially no details of the negotiation mandate were published by either the European Commission, who negotiates for the EU, nor by the US Government. The secrecy sparked a lively debate, where the public and some member states called for more transparency – most recently by the French Government⁸. However, the Commission has released its position on a number of topics and in October 2014 the Council finally revealed the negotiating mandate.

⁷ <http://www.bna.com/ttip-forged-end-n17179890190/>.

⁸ Euractiv, 2014, France's latest calls for TTIP transparency fall on deaf ears, <http://www.euractiv.com/sections/trade-industry/frances-latest-calls-ttip-transparency-fall-deaf-ears-308652>.

2.2.1. Negotiation topics

Overall, there are 23 major topics discussed in the TTIP negotiations. These fall under the areas of market access, services and investment, regulatory issues and sectoral annexes on trade and goods (Table 2.1). Subjects such as competition policy, Investor State-Dispute Settlement (ISDS), Intellectual Property Rights (IPR) and regulatory coherence affect all economic activities to a different degree, depending on the sector. For example, the agricultural industry is specifically concerned with differing regulation on IPR, whereas trade in automotive vehicles is hindered by divergence in safety standards.

Table 2-1: Main topics TTIP negotiations

Negotiation areas	Discussion topics
Market access	<ul style="list-style-type: none"> - Market Access for Goods - Agriculture & Processed Agricultural Products - Rules of Origin
Services and Investment	<ul style="list-style-type: none"> - Services - Sub-group on regulatory cooperation in financial services - Investment - Investor-State Dispute Settlement
	<ul style="list-style-type: none"> - Overall Co-ordination Horizontal Chapter on Regulatory Issues; Regulatory Coherence (cf. technical and safety standards)
Regulatory Issues	<ul style="list-style-type: none"> - Cars - Machinery and electronics - Chemicals
Sectoral Annexes on Trade in Goods	<ul style="list-style-type: none"> - Medical devices - Pharmaceuticals - Cosmetics
	<ul style="list-style-type: none"> - Textiles TBT - Sanitary and Phytosanitary Measures - Public Procurement
	<ul style="list-style-type: none"> - Intellectual Property Rights - Trade and Sustainable Development (labour and environment) - Competition Policy; State Owned Enterprises and other enterprises benefiting from special government granted rights; Subsidies
	<ul style="list-style-type: none"> - Trade-related Aspects of Raw Materials and Energy - Customs and Trade Facilitation - Dispute Settlement

2.2.2. Negotiation mandates and positions of main stakeholders

Initially, the negotiation mandates of both parties were kept secret. Some information was made available during the process (through leaked documents) and in October 2014 the EU mandate was finally made public. In the US, only certain parts of the mandate were officially made public.

European Union

DG Trade, under the leadership of the Commissioner, is responsible for negotiations but draws on knowledge and expertise from across the European Commission. During negotiations, the Commission informs and consults EU Member States through the Trade Policy Committee, consisting of senior officials from each Member State and the Foreign Affairs Council. The European Commission informs the European Parliament via its Committee on International Trade in which members of the European Parliament have a seat.

Before the start of the negotiating process, the European Commission was given a mandate to negotiate on behalf of the council. The mandate indicates under what conditions the Commission is allowed to approach the US during the process⁹. The general principles are that that the negotiations must take into regard:

- International environmental and labour agreements.
- EU member states environmental, labour and consumer legislation.
- EU and its member states cultural and linguistic diversity¹⁰.

If the agreement falls within the competence of the EU, the Presidency designates a person to sign (often the European Commissioner for trade) on their behalf. The competences are defined by the Lisbon Treaty. Where the agreement includes provisions that fall under the responsibility of the Member States, it is necessary for them to individually ratify the final documents. This is called a "mixed agreement". In a letter to Trade Commissioner Karel de Gucht, members of national parliaments from sixteen European countries, including Germany, France and the United Kingdom, claimed the right to ratify large trade agreements negotiated by the European Union on their behalf. According to the Members of Parliament, trade agreements such as TTIP and the Comprehensive Economic and Trade Agreement (CETA) discussed by the EU and Canada fall within the competences of national sovereignty. Statements from the EU Commissioner of trade point towards the outcome of the TTIP being in the form of a mixed agreement^{11, 12}.

United States

The Office of the United States Trade Representative (USTR) is part of the Executive Office of the President and is responsible for negotiations with new trading partners. Up till now, the mandate of the US negotiation team has remained secret, yet the Office of the USTR has published a detailed overview of the objectives of the US of which the most important are summarised in Table 2.2.

Table 2-2: US Trade objectives

Trade in goods	The elimination of all tariffs and other duties on trade in agricultural, industrial and consumer products between the US and the EU.
Non-tariff barriers and regulatory issues	The elimination or reduction of non-tariff barriers that decrease opportunities for US exports and provide a competitive advantage to products of the EU while maintaining the level of health, safety and environmental protection.

⁹ [http://europa.eu/rapid/press-release MEMO-13-564_en.htm](http://europa.eu/rapid/press-release_MEMO-13-564_en.htm).

¹⁰ Summary of the full mandate: [http://eu-secretdeals.info/upload/TTIP-mandate M-Schaake_website.pdf](http://eu-secretdeals.info/upload/TTIP-mandate_M-Schaake_website.pdf).

¹¹ <http://www.bilaterals.org/?de-gucht-assures-that-ttip-will&lang=en>.

¹² <http://euobserver.com/institutional/124833>.

Trade in services	Improved market access in the EU on a comprehensive basis
Investment	Comparable rights for US investors in the EU as in the US, while ensuring that EU investors in the US have no additional rights accorded than US investors.
Labour	Obtain appropriate commitments by the EU with respect to internationally recognised labour rights.
Environment	Obtain appropriate commitments from the EU to protect the environment.
Dispute settlement	Establish fair, transparent, timely and effective procedures to settle disputes on matters arising under a trade and investment agreement with the EU ¹³ .

The United States aims to expand trade and investment between the US and the EU as it believes that it will lead to increased economic growth, jobs and international competitiveness. However, both in the US and the EU, opposition against the Investor State Dispute Settlement (ISDS) is high. The Investor State Dispute Settlement (ISDS) is a controversial procedure that allows foreign investors to take foreign governments to a special arbitration court if they feel this government has acted to undermine their investments in the particular country. In December 2013, over hundred international, US and EU civil society organisations signed an open letter to USTR Michael Froman and EU Trade Commissioner De Gucht opposing the ISDS¹⁴. Moreover, various lower American governments have announced that they will not support trade agreements if they include clauses on ISDS¹⁵.

Although they are not formally involved in the negotiations, many stakeholders have announced viewpoints and positions regarding the TTIP. The main stakeholders are industry associations and labour and environmental organisations. National governments and parties outside the EU and US area have announced positions regarding the TTIP.

Industry associations in the EU and US

In general, the two major industry stakeholders on both continents, BusinessEurope and the US Chamber of Commerce, support the TTIP with reference to expected economic growth and consumer benefits, a streamlined regulatory framework which facilitates increased trade between the EU and the US, job growth, increased innovation and competitiveness and an impetus to mutual investment. In a joint contribution to the stakeholder meetings on TTIP, the two stakeholders emphasised the importance of an ambitious approach to regulatory issues within the framework of the TTIP in order to enhance trade¹⁶.

¹³ <http://www.ustr.gov/about-us/press-office/press-releases/2014/March/US-Objectives-US-Benefits-In-the-TTIP-a-Detailed-View>.

¹⁴ NRC Handelsblad, *Dispuut om zeggenschap over handelsakkoorden*, June 26, 2014.

¹⁵ Ibid.

¹⁶ http://ec.europa.eu/enterprise/policies/international/cooperating_governments/usa/jobs_growth/files/consultation/regulation/9-business-europe-us-chamber_en.pdf.

Labour and environmental organisations

Opinions of labour and environmental organisations in US and EU regarding the TTIP are mixed. Various environmental organisations, trade unions and civil rights agencies have voiced concerns regarding minority and civil rights, labour, agriculture, environmental standards and data protection that might be affected by the TTIP. The level of regulation and protection in these fields in the EU, substantially diverge from regulatory measures in the US. In particular, European civil society movements therefore fear a weakening of the current EU standards.

The European Trade Union Confederation (ETUC) for instance has announced that it is in favour of increased trade, but, emphasises the importance of maintaining high standards. General Secretary Bernadette Ségol, stated that; "European and American trade unionists are united in supporting a free trade deal between the EU and the US only if it promotes workers' rights, generates quality jobs, upholds public services and procurement, democratic decision making and international conventions¹⁷". ETUC is concerned with regard to the lack of ratification of ILO conventions in the US, particularly regarding the right to organise and negotiate collectively¹⁸.

In the United States, labour organisations also support the Transatlantic Trade and Investment Partnership. For example, The American Federation of Labour and Congress of Industrial Organisations, the largest federation of Unions in the US welcomed the proposed trade deal by referring to the "advanced economies, high national incomes, and well-developed legal and regulatory regimes designed to protect the environment and defend workers' rights"¹⁹.

Environmental organisations fear that the TTIP will lead to harmful effects on the environment. After the EU non-paper on a Chapter on Energy and Raw Materials in TTIP, in which the EU urged the US to lift bilateral restrictions on gas and crude oil, was leaked environmental organisations wrote a letter to Ambassador Froman calling on the US "to oppose the inclusion of a specific chapter dedicated to energy [...] that could lead to automatic approval of export licenses for crude oil and natural gas"²⁰.

The background to this letter is that environmental organisations fear stimulation of energy production through fracking, a technique deemed harmful to the environment in particular in the EU. In addition, they are afraid that an increased focus on fossil fuels will delay the transition to renewable energy.

Parties outside the EU and US

Should the TTIP be signed, it has the potential to become a game-changer in the global economy as the two largest trading blocs will merge and become the largest free trade zone in history. This has caused scepticism among non-parties to the TTIP negotiations. First, the ongoing EU and US negotiations mean abandonment of their former position as promoters of a liberal economic order reducing barriers to trade via the WTO which promotes the reduction of trade barriers between all its member countries and not just between a subset of them. Second, on a practical level, outsiders face possible negative consequences such as trade diversion resulting from preference erosion and a decrease of relative competitiveness, as well as the interruption of production chains due to new rules

¹⁷ <http://www.etuc.org/press/ttip-must-work-people-or-it-won%E2%80%99t-work-all>.

¹⁸ <http://www.etuc.org/press/us-ambassador-meets-trade-unions-ttip>.

¹⁹ <http://peoplesworld.org/union-leaders-question-proposed-u-s-europe-free-trade-pact/>.

²⁰ http://action.sierraclub.org/site/DocServer/TTIP_Energy_Letter_Final_1_.pdf?docID=16121.

of origin if the TTIP was signed. This has led to countries that depend on demand from the EU and the US, vigilantly following the negotiation process.

2.2.3. Other information available on the TTIP process

As previously stated, the TTIP negotiations are confidential in order to ensure that negotiators feel free to discuss controversial topics and to prevent public opinion from influencing the negotiation teams. Therefore, it is not possible to provide the ITRE committee with concrete intermediate results of the negotiation process so far.

However, since the start of the negotiation process, various documents have been leaked allowing for a glance of the positions mounted by (especially) the EU. The leaked, and later officially published initial non-papers of the European Commission concern cross-cutting and institutional provisions on regulatory issues, technical barriers to trade, sanitary and phytosanitary measures, public procurement, raw materials and energy, and trade and sustainable development²¹. The most relevant of these non-papers for this study, is the paper on raw materials and energy, which will be discussed in chapter three. In September 2013, a draft EU text regarding the Chapter on Energy and Raw Materials was revealed, articulating the EU position and addressing principles and definitions for a future agreement, which will also be touched upon in chapter three²².

2.3 Conclusions

The TTIP negotiation process is part of a longer tradition of US – EU negotiations. It also has to be seen in the light of other regional trade agreements currently being negotiated given the lack of conclusive progress in the global WTO trade negotiations. In July 2013, these negotiations commenced and according to plan, they have to be concluded with an agreement in 2015. In October 2014, the seventh round of talks, were held. Due to confidentiality, no results of the negotiations are known so far, a fact that is by itself criticised by some parties. However, several details of the negotiations have already been leaked and have become the subject of public discussion. Whereas many parties stress positive impacts on US and EU economies to be anticipated, there are also concerns raised by a variety of stakeholders on several topics.

²¹ <http://trade.ec.europa.eu/doclib/press/index.cfm?id=943>.

²² <http://big.assets.huffingtonpost.com/TTIPNonPaper.pdf>.

3. POTENTIAL IMPACT OF THE TTIP ON THE ENERGY SECTOR

This Chapter presents the TTIPs impact on the energy sector, with special attention to the fossil fuels oil and gas. We commence by providing some background information regarding the EU's energy consumption and a description of the major tariff and non-tariff barriers that are applicable for the trade in different fuels and renewable energy technologies. This is followed by answers to the questions regarding energy posed by the ITRE committee, as specified in chapter 1.

3.1. Trade and Competitiveness

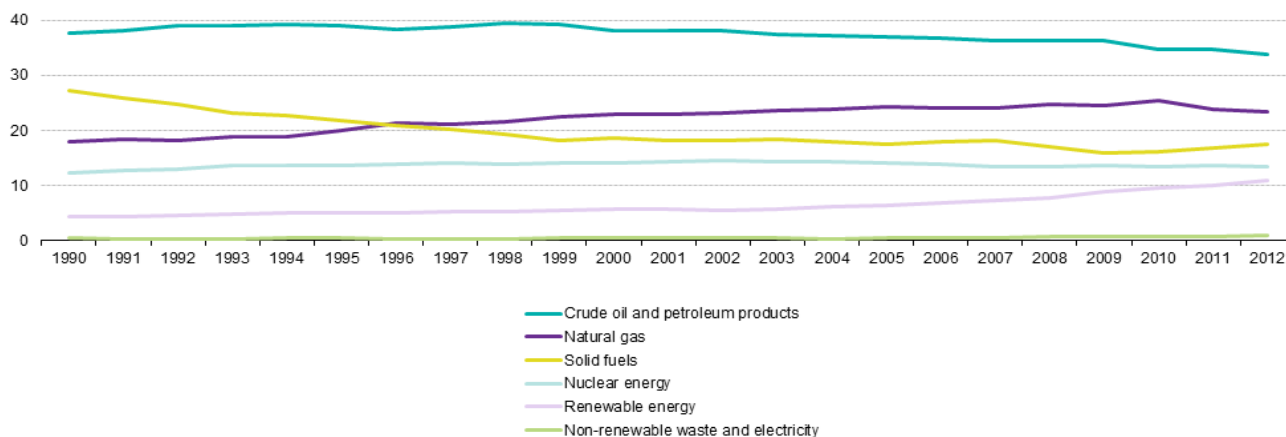
This section gives an overview of the impacts of the TTIP on the trade of energy goods and services.

3.2. Background

EU energy consumption and production

Energy consumption within the EU-28 totalled 1683 million tonnes per oil equivalent (Mtoe) in 2012. The EU energy consumption has not changed much over the last 20 years (in 1990 it was 1668 Mtoe). However, there have been major changes in the composition of energy production and consumption. Figure 3-1 below shows the share of different types of energy in total EU energy consumption. The picture is dominated by crude oil, petroleum products and natural gas, followed by solid fuels and nuclear energy. Production of primary energy in the EU-28 totalled 794 Mtoe in 2012, following the downward trend observed in recent years (16 % lower than a decade ago). Over the last 10 years, the production of renewables has increased by 81 %, the production levels of the other primary sources all decreased: crude oil (-53 %), natural gas (-35 %) and solid fuels (coal, lignite) (-21 %) and nuclear energy (-11 %). Due to lower production levels in the EU, energy imports increased to 923 Mtoe in 2012. EU-28 dependency on energy imports increased from less than 40 % of gross energy consumption in the 1980s to 53 % in 2012.

Figure 3-1: EU-28 Gross Inland Energy Consumption, 1990-2012, by fuel (% of total consumption)



Source: Eurostat (online data code: nrg_100a)

Energy trade

The main energy sources worldwide are coal, oil, gas and uranium. They all have distinct geological /production characteristics, are regulated in very different ways and are traded in markets of very different structures. 'Energy', in the TTIP context is not a unified sector but a juxtaposition of very distinct sub-sectors and markets each of which need to be analysed in their own light and merit. Energy is unlike almost any other good which trade negotiators end up dealing with. In most other sectors, the question is about how new trade rules could make exports easier. In this case, the scope is more complex as the main goal (for some goods) is not to acquire a larger amount at a lower price. The trade analysis is further complicated by the fact that the US has a very idiosyncratic approach to energy around notably the "energy independence theme". Both crude oil and natural gas exports have been heavily restricted for many years in order to protect domestic energy security.

Coal is the main imported commodity from the US, accounting for 18 % of the EU's total coal demand (US solid fuels imports nearly tripled since 2006). While there are no trade issues in coal in the narrow sense, this could raise issues not unlike those discussed around investment and ISDS except not from a foreign investor perspective but from that of a supplier. From some policy angles the EU is importing too much US coal (and too much coal in general) compared to its 2020 climate objectives (2008 Energy & Climate package) and to 2030 (Climate package of October 2014). **Nuclear fuel** is also traded, but in insignificant percentages of total imports. This is due to the fact that the US does not hold any significant amount of the global uranium reserves. **Crude oil and natural gas** (used for energy production) are the two most important energy sources in the EU (the EU's energy dependency rate for crude oil is 88 % and 66 % for natural gas). Due to export restrictions, they are currently not traded between the EU and the US. The imports of natural gas visible in table 3-1 are misleading. They refer to re-gas exports. The US does not ship domestic natural gas directly to the EU. What happens is that a company in the US imports natural gas, stores it and sells it at a later stage when prices are higher. As shown in table 3-1, **gasoline and diesel (see "Petroleum oil and oils obtained from bituminous minerals, other than crude")** are traded in large amounts. This is due to the high consumption of gasoline in the US and the increasing demand for diesel in Europe. These are to be treated separately from crude oil as they do not fall under the IEA's coordination mechanisms.

Table 3-1: EU-27 - US trade by SITC (2013) per ton

EU-27 - US trade by SITC (2013) per ton		
Commodity	Imports	Exports
Coal	103 285 142	8
Briquettes, Lignite and Peat	1 231	24 314
Coke and Semi coke	199 066	6 874
Petroleum oil and oils obtained from bituminous minerals, other than crude	17 905 931	22 054 330
Petroleum oil and oils obtained from bituminous minerals, crude	4 843	3 173 598
Waste oils	16 145	4
Residual petroleum products	5 954 695	466 022
Liquified propane and butane	1 484 660	1 819
Natural Gas, whether or not liquefied	497 697	33
Petroleum gases and other gaseous hydrocarbons	4 917	32 552

Source: Eurostat: trade by SITC.

Tariff barriers

There are currently very few tariff barriers in place for the trade in energy goods, as shown by table 3-2 below, apart from tariffs on wind energy equipment. The main barriers are from substantial non-tariff measures, such as the export restrictions on crude oil and natural gas, EU climate policy and the Fuel Quality Directive (FQD). For renewable energy, Local Content Requirements hinder free trade through mandatory usage or subsidies of local material or workforce.

Table 3-2: Tariff and non-tariff barriers energy/energy technology trade

Fuel type	Non-tariff measure	EU tariff (0%)	US tariff (%)
Oil	(US) Export ban - License Required	0	>
Natural gas	(US) Export ban - License Required	0	0
Refined fuels	(EU) Fuel quality directive (FQD)	0	> 0.4 ^{25,26}
Coal	(EU/US) Climate policy	0 ²⁷	0 ²⁸
Solar cells (tech)	(EU/US) Local content requirement	0	0
Wind energy (tech)	(EU/US) Local content requirement	2.7	1.25 ²⁹

Source: Tariff data WTO.

What would the impact be of TTIP on transatlantic trade of energy goods and services?

Trade in oil, natural gas, coal and nuclear fuel is not likely to be affected by the agreement, while imports and exports of petroleum products (gasoline, diesel) are likely to increase. If local content requirements are removed the wind energy sector is likely to benefit from the TTIP. Considering that the EU has a trade deficit and low comparative advantage for solar energy, the impact can be expected to be negative

Considering the US export restrictions on both **oil and gas**, the impact of the TTIP is likely to be limited, as the current conditions for exports will only be marginally affected by the agreement. This is due to the fact that even though an FTA would speed up the licensing process for LNG and remove much of the DoE discretionary power, the total export quota will not significantly increase (from 1bcm/day to 1.12bcm/day³⁰). Furthermore, until the Sabine Pass liquefaction terminal is completed, there is no operational export plant that could bring LNG from the US to the EU. There might be some potential in the long-term if the US increases its domestic energy production. The TTIP could also create incentives for investments in US LNG terminals and contribute to a potential increase in trade of LNG across the Atlantic.

The only significant unrefined energy source imported from the US to the EU is coal³¹. The TTIP could have an indirect effect on this trade, but this depends on developments in the oil and gas markets. A driver for the EU's coal imports is the US fuel shift to natural gas.

²³ Tariff of per barrel:

²⁴ Tariff is actually a fixed price per barrel: 0.04€ – 0.16€ depending on API. Percentage derived from crude oil price on 29-09-2014. <http://www.bloomberg.com/energy/>.

²⁵ <http://www.usitc.gov/publications/docs/tata/hts/bychapter/1301c27.pdf>.

²⁶ Tariff is actually a fixed price per barrel: 0.41€ – 0.81€ depending on API. Percentage derived from gasoline price on 29-09-2014. <http://www.bloomberg.com/energy/>.

²⁷ <http://tariffdata.wto.org/ReportersAndProducts.aspx>.

²⁸ Ibid.

²⁹ Ibid.

³⁰ <http://www.iie.com/publications/pb/pb14-19.pdf>.

³¹ http://ec.europa.eu/energy/publications/doc/2013_pocketbook.pdf.

During the fracking revolution, the US energy market was flooded with cheap shale gas, diverting excess coal overseas, including to the EU. It is important to note that US-EU relations on coal will not only be affected by trade measures as factors such as carbon pricing, EU ETS and any US equivalent (the California ETS, linked to the Quebec ETS, and presently giving more rational prices than the EU ETS), the Paris COP 21 and other aspects of climate policies are also important.

Given that the TTIP removes tariffs and non-tariff measures, transatlantic trade in refined **petroleum products** such as gasoline and diesel is likely to increase, as these commodities become more competitive given lower trade costs. In 2012, the trade generated 25EUR billion. Full trade liberalisation might be problematic due to the “fuel quality directive”, which gives different GHG values to fuels, depending on their origin / source. This would be negative for spirits derived from unconventional crudes such as tar sands, as they (through the FQD) are assigned a higher climate impact, which could prohibit exports to the EU³². The trade in **wind energy technologies** is likely to benefit from the TTIP through the removal of tariffs, protectionism, the mutual recognition of standards, and deeper regulatory cooperation in the future. With regard to **nuclear energy**, the US is neither a major exporter of uranium to the EU, nor does it hold any substantial amount of global reserves³³. European demand is stable and supply is relatively diversified. There are currently no tariffs on nuclear fuels³⁴, and trade is likely to remain insignificant.

3.3. Security of supply and competitiveness impacts

In order to address the likely impact of the TTIP on supply and competitiveness of the EU, we define energy security and analyse if the TTIP will include any mechanisms to either avoid or respond to a supply crisis. This is followed by an in-depth analysis of the TTIP’s impacts on the oil and gas sectors.

Box 3-1: Energy Security

a. Energy security

The term can be defined as “the uninterrupted availability of energy sources at an affordable price”³⁵. It can be threatened by a high and undiversified import dependency. Foreign suppliers of natural resources can restrain, or restrict exports to other countries in order to damage their economies. This was done during the 1973 oil crisis, when the “Organisation of Arab Petroleum Exporting Countries” (OAPEC) enacted an oil embargo towards the US and its NATO allies³⁶. During this time, the price for oil in the US nearly quadrupled. In addition, insufficient energy security can also mean that a country is sensitive to price fluctuations on the global energy markets. This can be due to a lack of energy diversity, as in the case of the EU transport sector which is predominantly dependent on oil³⁷. A marginal increase in the price of oil has severe effects on the total trade balance.

³² <http://oilprice.com/Energy/Energy-General/How-an-EU-US-Free-Trade-Agreement-will-Affect-the-Energy-Sector.html>.

³³ http://ec.europa.eu/euratom/observatory_data.html.

³⁴ <http://tariffdata.wto.org/ReportersAndProducts.aspx>.

³⁵ <http://www.iea.org/topics/energysecurity/>.

³⁶ <http://csis.org/publication/arab-oil-embargo-40-years-later>.

³⁷ http://europa.eu/rapid/press-release_MEMO-13-24_en.htm.

Are mechanisms to handle energy supply crises envisaged?

The TTIP could help address the issues of energy security in the EU in terms of oil and gas trade, but it seems rather unlikely to assume there would be a direct security mechanism involved in the agreement, beyond what already exists in the form of the IEA oil emergency stockholding and emergency response mechanism.

The US has yet to become self-sufficient in energy and it will not have the capacity to meet the EU's demand for resources for many years to come³⁸. During the TTIP negotiations, the US has been reluctant to engage in dialogue concerning a chapter on energy and raw materials, indicating difficulties in agreeing on these topics³⁹. Commissioner for trade Karel de Gucht has recently repeated his interest in the including an energy chapter in the agreement, and claims that he cannot imagine seeing an agreement without these types of provisions. However, US officials have remained non-committal on this topic⁴⁰.

The TTIP could increase EU energy security in the long term via an increase in gas imports from the US. For this to be achieved, it would be important to improve the capacity of internal (transmission and distribution networks, especially interconnectors) and external infrastructure. This is crucial for eastern EU member states, which are almost exclusively dependent on Russian gas, and very sensitive to supply disruptions. Currently, none of these countries have LNG import terminals. That said, regasification plants are being constructed in Eastern Europe, as can be seen in Lithuania and Poland⁴¹. For this to be utilised, pipelines in Germany, Slovakia and Hungary have been made reversible to move gas into, as well as out of, Eastern Europe. Furthermore, the EU Commission is ready to spend large funds linking idle Spanish re-gas terminals to the rest of Europe.

Would the US crude oil export restrictions be removed?

Whether the export restrictions on crude oil will be lifted, remains very unsure, and it is largely a decision that would be taken independently from the TTIP. This is due to the fact that apart from allowing exports to Canada and Mexico, the export ban has not been removed by other US FTAs^{42, 43}. The TTIP negotiations are being used to critically address and question the current export ban on crude oil. To date, the crude oil discussion process has been rather unsuccessful but current regulations allow the export of crude oil condensates. The US oil boom may provide a temporary window of opportunity as the Ukraine crisis is creating temporary US political support to reverse the ban. This said, public opinion in the US is not in favour of crude oil exports⁴⁴. The real tension is however between energy companies wishing to export resources at a higher price, versus the manufacturing industry which aims to keep production costs low and the public, who prefer lower gasoline prices (a crude oil derivative). The spot price per barrel of crude oil in the US is EUR 72.23 compared to EUR 75.01 in Europe⁴⁵. An increase in US exports would mean a higher price for oil (and its derivatives) on the US market. This is due to the fact that the removal of export restrictions increases the market access for US refineries which are able to sell their product overseas at a higher price.

³⁸ Triple E Consulting, data derived from EIA 2014 Annual Energy Outlook Scenarios.

³⁹ <http://www.scribd.com/doc/233022558/EU-Energy-Non-paper>.

⁴⁰ <http://www.reuters.com/article/2014/09/09/us-usa-eu-trade-idUSKBN0H428Y20140909>.

⁴¹ <http://www.globallnginfo.com/World%20LNG%20Plants%20&%20Terminals.pdf>.

⁴² 1985, Canada and Mexico are somewhat unique examples, given the historical trading relations between the nations.

⁴³ Jason Bordoff, 2014, U.S. Crude Oil Export Policy, Columbia University Center on Global Energy Policy.

⁴⁴ Reuters/Ipsos poll recorded in March 2014.

⁴⁵ http://www.eia.gov/dnav/pet/pet_pri_spt_s1_d.htm (15-09-2014).

Box 3-2: Different forms of oil and oil products

Different forms of oil and oil products. Oil is a fossil fuel consisting of a mixture of hydrocarbons that exist as a liquid in natural underground reservoirs, and remains liquid when brought to the surface. It should not be confused with petroleum products which are refined forms of crude oil. It can be categorised into two groups: conventional and unconventional. The conventional comprises of crude oil from onshore reservoirs from which at least some oil can be extracted without Enhanced Oil Recovery (EOR) techniques such as fracking or heating, from sources in shallow and medium-depth offshore reservoirs, as well as of natural gas liquids (NGLs) extracted from natural gas reservoirs. The unconventional include light tight oil (LTO), oil sands, extra heavy oil and bitumen (EHOB), gas to liquids (GTL), coal to liquids (CTL) and, to a limited extent, biomass to liquids (BTL). Many (but not all) analysts include deep water reservoirs among the unconventional group.

Regulation

Companies can file applications to the US Bureau of Industry and Security (BIS, Commerce Department), which issues licenses and classification rulings under a strict and entirely confidential process. The BIS may approve the applications if it judges the application to be in line with national interest and energy regulation. The general requirements are that⁴⁶:

- The exports result directly in the importation of crude or refined product of equal or greater quantity or quality that is not less than the quantity or quality of product that would be derived from the refining of the crude oil being exported (swaps).
- The contract under which crude oil is imported can be terminated if US petroleum supplies are disrupted or seriously threatened; and
- Applicant can demonstrate that the crude oil could not be reasonably marketed in the United States for compelling economic or technological reasons.

Table 3-3 below shows under which circumstances an export licence is required.

Table 3-3: Crude oil licences

Export of	Licence required	No licence required	May be required
US origin crude oil to Canada	X		
Foreign crude oil	X		
Finished and unfinished products		x	
Products with crude oil in blend			X
Approved exports of processed ...		x	

Source: CRS.

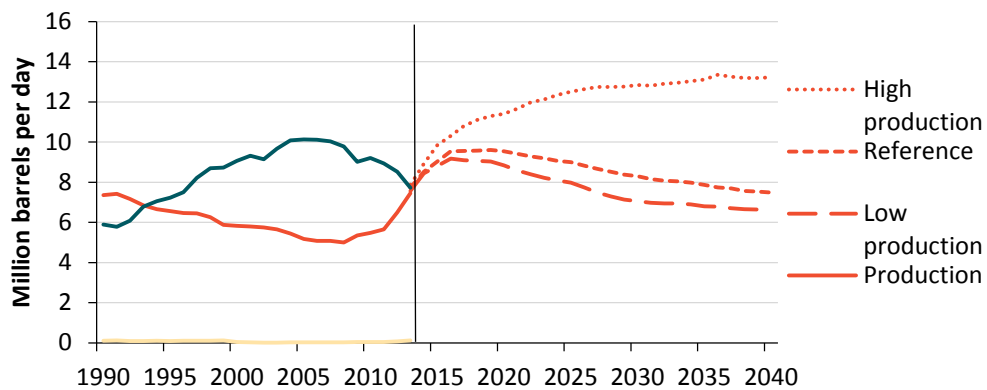
Earlier this year, in an effort to reduce oversupply of light tight oil (LTO) and condensates resulting from the US unconventional resources development, the BIS published a clarification which confirmed that it would not classify stabilised and minimally distilled condensate as crude oil. The excess of LTO (light tight oil) is currently being handled largely through blending US light and Canadian heavy crudes and by exporting ethane to

⁴⁶ Jason Bordoff, 2014, U.S. Crude Oil Export Policy, Columbia University Center on Global Energy Policy.

Canada through specialised pipelines. However more action is needed⁴⁷. Therefore, export advocates argue that condensates should not technically qualify as “crude oil” as is defined by the BIS⁴⁸. However, the BIS has kept a certain level of ambiguity and discretion open while the broader issue of oil exports is being debated by stressing that this move signals “no change in policy on crude oil exports”⁴⁹.

As can be seen from figure 3-2, crude oil exports from the US are almost non-existent; US crude oil production has increased by 50 % since 2008; and within the last 10 years, US oil imports have decreased by 21 %. However, in the year 2013 the US still relied on foreign crude oil resources in order to meet domestic demand. The future output of crude oil is open to a wide range of scenarios, as indicated by the EIA graphic presented below. It is worth noting however that the IEA does not take any additional technological breakthrough of the type that made the shale gas and tight oil revolution possible in the first place into consideration.

Figure 3-2: Historical and projected US crude oil patterns⁵⁰



Source: Data derived from EIA 2014 Annual Energy Outlook Scenarios.

Crude typology

In order to assess the potential exports of oil, it is necessary to look at different types of crude typology. The US shale gas boom has led to an increased production of natural gas liquids, a form of tight oil. The term “tight” refers to what sort of rocks the molecules are produced from. (Figure 3-3). A majority of this increase in tight oil has been in the form of “light” oil, in which case the term “light” defines the mix of molecules present in a given reservoir. Much of tight oil happens to be light, which gives us the term “light tight oil” (LTO).

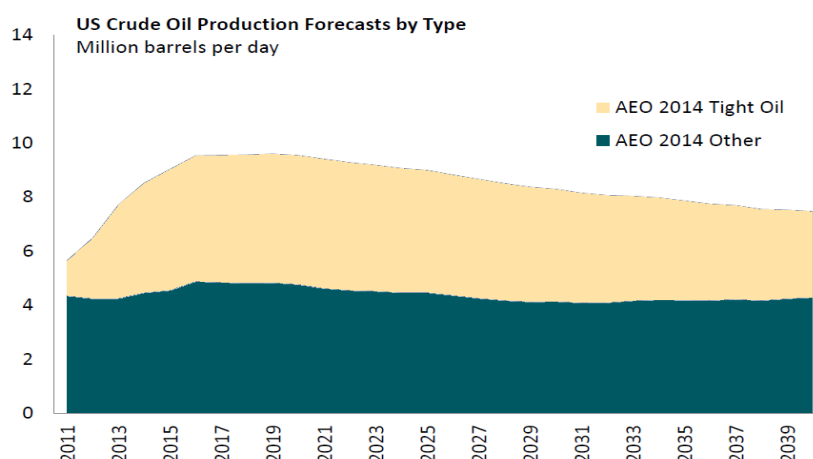
⁴⁷ http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=dfe108c9-cef6-43d0-9f01-dc16e6ded6b4.

⁴⁸ For more information read Brown, P. et al, 2014. U.S. Crude Oil Export Policy: Background and Considerations, CRS Report to Congress.

⁴⁹ Inside US trade, 2014, BIS opens door to certain oil exports with new classification.

⁵⁰ Triple E Consulting, data derived from EIA 2014 Annual Energy Outlook Scenarios.

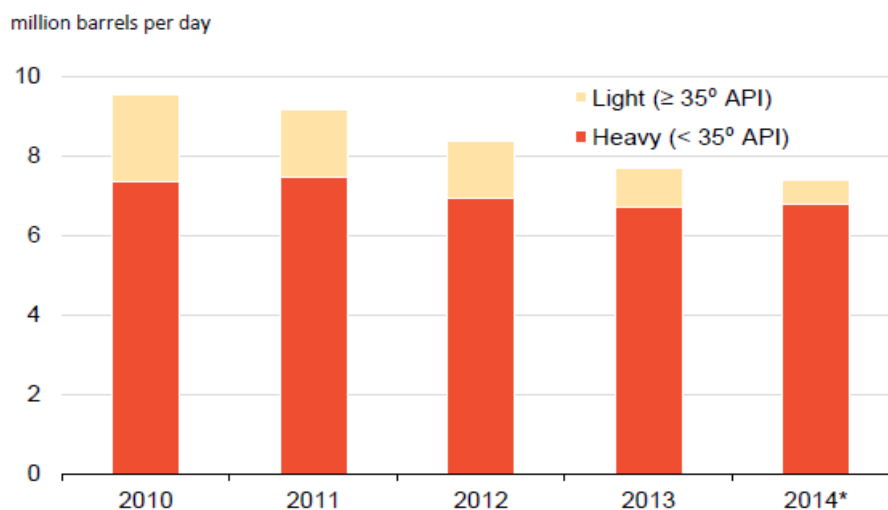
Figure 3-3: U.S. crude oil production forecast



Source: IEA Annual Energy Outlook 2014.

Therefore, imports of light oil (API > 35) have slowly decreased over time and are approaching levels of zero, as indicated by Figure 3-4. The actual or potential export values vary significantly with quality characteristics⁵¹.

Figure 3-4: U.S. crude oil imports by light and heavy crude type



Source: EIA⁵².

To date, the increase in US light crude production has been accommodated by displacing imports of light crudes and developing demand for the light end of the barrel, notably ethane and LPGs. If growth continues, domestic supply can no longer be accommodated by current US refineries. A refinery consists of a specific set of equipment that can cost anything between a hundred million and a few billion dollars and can process crudes in very different ways. In practice, each refinery is optimised for a certain type of crude mix. US refineries tend to be of the more expensive type, able to get more valuable products out of the cheaper heavier crudes. However, their utilisation rates have already reached

⁵¹ EIA, 2014, Crude oil production forecast-analysis of crude types.

⁵² http://www.eia.gov/dnav/pet/pet_move_imp_dc_NUS-Z00_mbbldp_a.htm.

levels of approximately 90 %. It is probable that future indigenous production will exceed the capacity of the refining system (e.g. Texas). With export restrictions in place, resources cannot be diverted to other markets. The issue is that current oil refineries are not configured for the influx of very light oil. Many of them are designed to crack long hydrocarbon chains, often using imported oil as their energy source. If US oil producers have the option of selling their crude oil abroad, they may be able to get a higher price for it. Trapping light, domestic crude within US borders could penalise US production in the near future, which could mean higher costs for refiners and consumers⁵³.

What are the possible options for the US oil industry to accommodate an increase in domestic oil production?⁵⁴

- Investment in refineries that enable the processing of light crude oil rather than heavy crude. This has been done by European petrochemical companies, which are currently spending 25 % of CAPEX in North America⁵⁵.
- Add new splitter refineries to convert light crude into a mix of heavier fractions to feed domestic refineries and light products valued in other markets.
- Further decline of (light) crude oil imports.
- Increase in (light) crude oil exports.

Conclusion

Regarding the bans on crude oil, the US government essentially has two options to choose from⁵⁶:

1. Maintain current restrictions

The Congress could maintain the requirement to limit US crude oil exports. Should existing export restrictions remain in place, there may be several potential outcomes to consider. Light crude oil production is expected to continue growing in the short to medium term and existing refinery configurations may result in an oversupply of certain types of crude oil in specific locations (e.g. Texas). This could result in oil producers receiving lower prices for their products.

2. Modify restrictions

- A. Exempt light tight oil from export restrictions.
- B. Remove “lease condensate” from the BIS crude oil definition.
- C. Allow crude oil exports for a limited period of time. While actual light crude oil production levels are uncertain, one policy option may be to allow crude oil exports only for a defined period of time—five years, for example—after which the domestic production and export situation could be reassessed.

As it is an important decision, the US administration will probably, as an intermediate step, agree, to close their eyes to exports of light crudes to the extent that it is technically (legally) possible to classify such crude “products” as condensates.

⁵³ API, Erik Milito.

⁵⁴ EIA, 2014, US Crude oil exports, Lynn D. Westfall.

⁵⁵ <http://in.reuters.com/article/2013/12/05/petrochemicals-europe-idINL5N0JB3JW20131205>.

⁵⁶ CRS, 2014, U.S. Crude Oil Export Policy: Background and Considerations, Congressional Research Service.

Would natural gas exports from the US to the EU significantly increase?

Considering US export restrictions on natural gas in combination with the high demand for natural gas in Asia pacific leads to the conclusion that exports to the EU are not likely to increase. However, gaining FTA status in US exports, will probably contribute to a more liquid and contested market for natural gas. The evidence that informs this statement, come from the analysis of three segments;

- The US natural gas market.
- Regulation and FTA.
- Global and regional demand patterns.

Box 3-3: Different forms of natural gas

Different forms of natural gas. Natural gas can be defined as a mixture of fossil hydrocarbons that can be carried in gaseous form under normal pipeline conditions and sold to users for direct consumption in burners or other equipment. In practice, natural gas mainly consists of methane. Small quantities of ethane and traces of LPGs are often included, depending on the technology used to separate 'natural gas' from NGLs (PLGs and condensates) in the 'gas processing plants' that are a feature of well-head installations. Conventional gas is typically "free gas" that is recovered in porous zones in various naturally occurring rock formations, as well as "associated gas" that escapes from crude oil wells and is either vented, flared or captured for commercialisation. Following up on major innovations that resulted from US R&D programs and entrepreneurial innovation, unconventional gas can be extracted from rocks of low permeability, most notably shale rocks. It can also be extracted from pockets of methane that form in coal seams (coal-bed methane — CBM). Natural gas can be transported in normal gaseous form through pipelines or by ship or truck in the form of Liquefied Natural Gas (LNG) or less often, as Compressed Natural Gas (CNG)⁵⁷.

The US Natural gas market

The export of natural gas is subject to restrictions that apply to the 48 continuous continental States. These restrictions vary in discretionary power, depending on whether the importing partner country is linked to the US by a Free Trade agreement (FTA) or not. A company intent on commercially exporting LNG has to obtain the required combination of licenses: at the federal level, this implies an export permit from the Department of Energy (DOE) and a facility license from the Federal Energy Regulation Commission (FERC). Various siting and other licences are also required for safe operation under various State laws. The Natural Gas Act of 1938⁵⁸ directs the DOE to grant export authorisations unless the Department finds that the "proposed exportation or importation will not be consistent with the public interest"⁵⁹.

The use of hydraulic fracking made it possible to exploit the vast amount of US shale gas reserves. The country now holds 5 % of the world's natural gas supplies. As shown by figure 3-5, natural gas production is projected to escalate, primarily due to an increase in

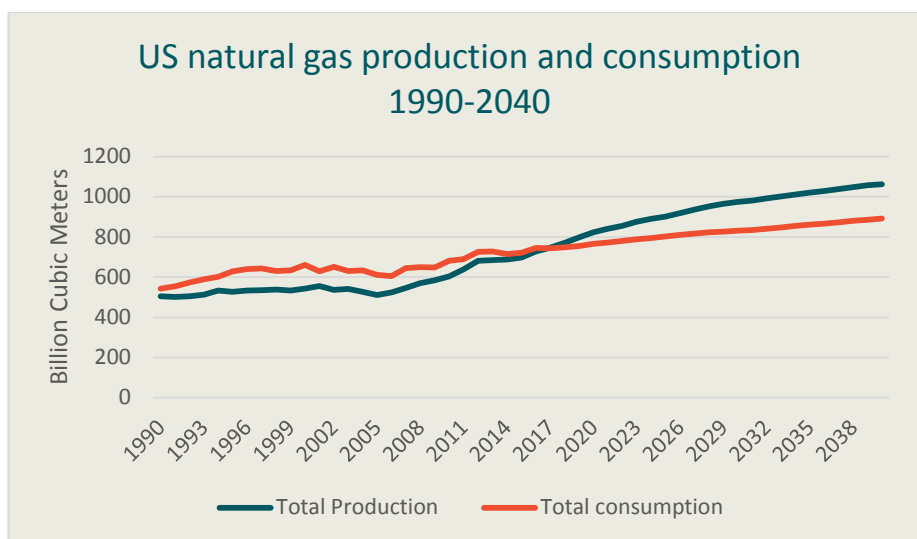
⁵⁷ <http://www.iea.org/aboutus/faqs/gas/>.

⁵⁸ <http://energy.gov/fe/services/natural-gas-regulation>.

⁵⁹ <http://www.law.cornell.edu/uscode/text/15/717b>.

shale gas extraction⁶⁰. The EIA projects that by 2018, domestic production will exceed consumption and the US will become a net exporter of natural gas.

Figure 3-5⁶¹: US natural gas production and consumption 1990-2040



Source: EIA forecasts: Market trends for natural gas, own conversion from tcf – to bcm.

Natural gas extraction is mainly a function of capital expenditure (CAPEX) costs, operational expenditure (OPEX) costs and the trading price. Therefore, the price of gas affects to what extent a resource can be considered recoverable. As shown by figure 3-6 below, overproduction of shale gas in the US led to a lower gas price, resulting in decreasing numbers of gas rigs and well completions⁶². This creates an incentive for the US to export natural gas in the form of LNG, as an increase in demand would lead to a higher gas price. This in turn equals more recoverable resources. The American petroleum institute claims that exports would create jobs in the energy sector and increase GDP⁶³. A study published by the DOE, agrees with this statement: it says that the net result from exporting LNG would be beneficial for the economy⁶⁴. On the contrary, some manufacturing industries oppose LNG exports, as it could go hand in hand with increased energy costs which would lead to a decrease in their competitiveness⁶⁵. An increase in LNG exports would lead to higher domestic prices and an increase in the cost of production. U.S. environmental groups such as the Sierra Club have reacted with strong opposition, mainly for climate reasons, but also because the proposal is inconsistent with U.S. law⁶⁶. Furthermore, US public opinion is not in favour of natural gas exports as there is a belief that it would lead to higher energy costs for households.

⁶⁰ http://www.eia.gov/forecasts/aeo/MT_naturalgas.cfm#windprod.

⁶¹ Ibid.

⁶² Weijermars, R. (2013) *US shale gas production outlook based on well roll-out rate scenarios*.

⁶³ <http://www.api.org/policy-and-issues/policy-items/lng-exports/~media/Files/Policy/LNG-Exports/LNG-primer/Liquefied-Natural-Gas-exports-lowres.pdf>.

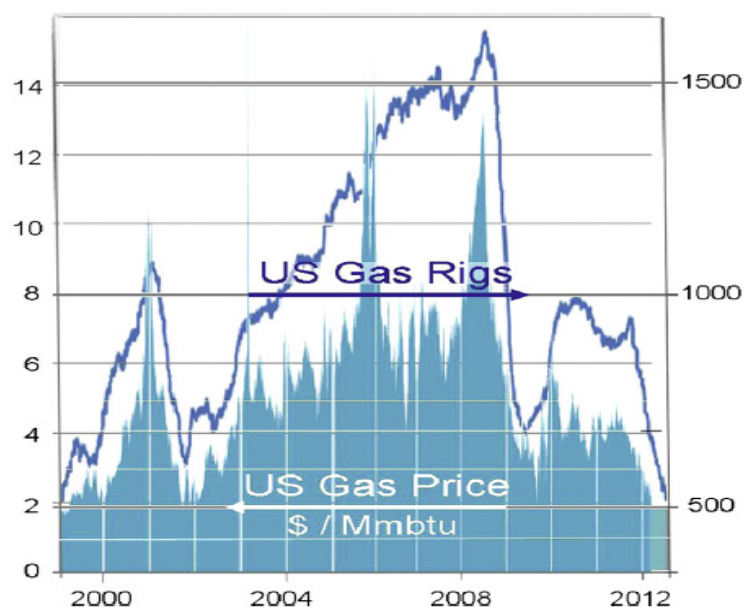
⁶⁴ http://www.nera.com/83_8451.htm.

⁶⁵ <http://www.forbes.com/sites/jonentine/2013/01/24/odd-couple-will-dow-chemical-and-ed-markeys-opposition-to-natural-gas-exports-cripple-americas-energy-advantage/>.

⁶⁶ [http://vault.sierraclub.org/trade/downloads/TTIP-ISDS-fracking-060314%20\(1\).pdf](http://vault.sierraclub.org/trade/downloads/TTIP-ISDS-fracking-060314%20(1).pdf).

The trade-off between a more positive trade balance versus increased costs creates a political divide. This will probably lead to a compromise, where exporting allowances will increase but remain controlled by federal regulation.

Figure 3-6⁶⁷: Henry Hub prices and total US gas rigs counts 1999-2012. Left axis explains US Gas Price in \$/Mmbtu and the right axis displays the total amount of US Gas Rigs. (MMbtu = Million British Thermal Units)



Source: Weijermars, R. (2013) US shale gas production outlook based on well roll-out rate scenarios.

Currently, only one U.S. LNG export facility is operational: the Kanai LNG terminal in Alaska, a state not subject to the Gas Act export restrictions. The Kanai LNG terminal exports mainly to Japan. While it came close to being mothballed, the rapid development of Japan's gas imports in the wake of Fukushima has given it a second lease of life.

As of April 2014, no less than 35 natural gas liquefaction and export licenses have been approved to FTA countries. However, only one facility⁶⁸ has received a final permit to export to non-FTA countries, and is expected to start exporting LNG by the end of 2015. Seven other projects have received conditional approval from the U.S. Department of Energy (DOE), as listed in table 3-4 below, but still await the facility approval by the FERC⁶⁹ before a final investment decision (FID) can be made. In addition, there are 25 pending applications for LNG terminals, which are predominantly located on the Gulf of Mexico and along the East Coast.

⁶⁷ Weijermars, R. (2013) US shale gas production outlook based on well roll-out rate scenarios.

⁶⁸ The Sabine Pass LNG terminal in Louisiana. Construction started May 2014.

⁶⁹ Three parts: (1) Issuance by FERC of Draft and (2) Final Environmental Impact Statement and (3) Authorization to Construct and Operate.

Table 3-4: US, non-FTA LNG exporting licenses

Facility	Export permit	Facilities permit	Granted	Coast	Operational	bcm ⁷⁰ / year
Sabine Pass	x	X	4-9-2012	South East	End 2015	22.7
Freeport LNG	x		17-5-2013	East	2018-2019	14.5
FLNG Liquefaction	x		17-5-2013	East	2018-2019	14.5
Lake Charles	x		7-8-2013	South East	2019	20.7
Dominion Cove	x		11-9-2013	East	2017	21.8
Cameron LNG	x		11-2-2014	East	2019	17.6
Jordan Cove	x		24-3-2014	West	2019	8.3
Oregon LNG	x		31-7-2014	West	2019	12.9
	8	1			2015 – 2019	133.0

Source: Office of Fossil Energy⁷¹.

The EU is highly dependent on natural gas and oil (crude and natural gas liquids) imports. Approximately 90 % of all crude oil imports are supplied by ship, whereas natural gas predominantly arrives via pipelines. Only a small fraction (15 %) is imported as LNG. There are 23 (179 bcm/a), commercially operational re-gas terminals, 7 facilities are under construction (35 bcm/a) and 32 are planned (>160 bcm/a). These figures indicate that Europe is expanding its gas infrastructure to be able to accommodate an increasing volume of LNG imports. In the recent years however, these regasification facilities have been grossly underused, with utilisation running at only 25 % in the most recent year⁷². Poland, in strong cooperation with Qatar, is one of the few European countries which appears to be seriously determined to add to import capacities, for reasons related to its need to substitute LNG for Russian gas. Even in this case, the present commercial situation is one in which Russian gas is cheaper to import than LNG — as a result of the premium price that LNG fetches in Pacific markets and because of astute Russian commercial and strategic decision making.

Table 3-5: Operational LNG terminals in Europe⁷³

Country	# of Terminals	Operational since	Capacity in bcm ⁷⁴ / year
Belgium	1	1987	9
France	3	1972, 1980, 2010	23.75
Greece	1	2000	5.3
Italy	2	1971, 2009	10.96
The Netherlands	1	2011	12
Norway	2	2011, 2011	10.65
Portugal	1	2004	7.9
Spain	6	1968, 1988, 1989, 2003, 2006, 2007	60.1
UK	3	2005, 2009, 2009	46.5
Total	23		179

⁷⁰ Billion cubic meters.

⁷¹ <http://energy.gov/sites/prod/files/2014/09/f18/Summary%20of%20LNG%20Export%20Applications.pdf>.

⁷² http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/PRESS_RELEASES/2014/F8B7B9BFC8679BC8E040A8C03C2F4FEF.

⁷³ Triple E Consulting, 2014, Economic Impacts of Shale Gas in the Netherlands.

⁷⁴ Billion cubic meters.

Regulation and FTA

The total licensed capacity for LNG exports from the US to FTA countries is 1.12bcm/day and 1bcm/day to non-FTA countries⁷⁵. The approval can be considered almost automatic when an FTA is in place, whereas it is a much slower process for countries without bilateral agreements. Therefore, the US House of Representatives has passed a bill that would require the DOA to speed up the process, and issue a decision in 30 days⁷⁶. The bill has yet to pass Congress⁷⁷, but the outlook seems positive as the proposal has support from both Republicans and Democrats. This would diminish the comparative advantages for FTA countries and level the playing field for non-FTA countries. It would further decrease the potential added value of including natural gas in the TTIP. Furthermore, recent developments in the US have led to a change in the DoE licencing process⁷⁸. Companies wishing to export LNG to non-FTA countries now need to file an environmental review with FERC before applying for approval at the DoE. Due to the fact that a FEER application costs up to \$100 million⁷⁹, this will speed up the approval process by letting commercially mature projects “jump the queue” and receive prompt consideration for a national interest determination⁸⁰. This will further decrease the advantages of becoming an FTA entity through the TTIP.

Currently, South Korea is the only large LNG importing country which the US has an FTA with. The majority of all US LNG exports have been supplied to Japan, a non-FTA country.

It is important to note that the US is currently negotiating another FTA called the Trans-Pacific-Partnership (TPP). It includes Australia, Brunei, Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam⁸¹. The adoption of the agreement would further decrease the comparative advantages of the TTIP regarding increased access to the US natural gas market, as more countries would be able to compete on an equal basis. The TPP would also give the US access to important markets in Asia, including Singapore which is emerging as an important LNG trading hub. However, the US is not the only natural gas producer involved in the TPP. The agreement would also be beneficial for countries such as Canada and Malaysia, which are currently constructing LNG liquefaction terminals⁸². At the moment, Canada only has only one import terminal available which is located on the east coast. An additional six projects have been proposed, five of them on the west coast, which illustrates the existence of plans to export to Asian pacific⁸³ countries. The EU is likely to enter into a FTA with Canada, namely the CETA⁸⁴. The agreement is not likely to change any existing trade in oil or gas, given the limited export opportunities for gas.

Global and regional demand patterns

In order to assess the potential of US natural gas exports, it is necessary to look at the global and regional natural gas supply and demand. Discussion of these two variables also enables us to consider the potential evolution of LNG spot prices, which is necessary in

⁷⁵ <http://www.iie.com/publications/pb/pb14-19.pdf>.

⁷⁶ <http://thehill.com/blogs/floor-action/house/210599-house-passes-bill-to-speed-up-natural-gas-exports>.

⁷⁷ <http://in.reuters.com/article/2014/06/25/usa-lng-exports-idINL2NOP623020140625>.

⁷⁸ <http://www.brookings.edu/research/interviews/2014/06/18-doe-export-proposal-eetv-goldwyn>.

⁷⁹ <http://www.reuters.com/article/2014/05/29/usa-energy-lng-idUSL1N0OF1SP20140529>.

⁸⁰ <http://www.brookings.edu/research/articles/2014/06/10-doe-approving-lng-export-goldwyn-hendrix>.

⁸¹ <http://www.ustr.gov/tpp/overview-of-the-TPP>.

⁸² <http://www.globalnginfo.com/world%20lng%20plants%20&%20terminals.pdf>.

⁸³ <http://www.nrcan.gc.ca/energy/natural-gas/5683>.

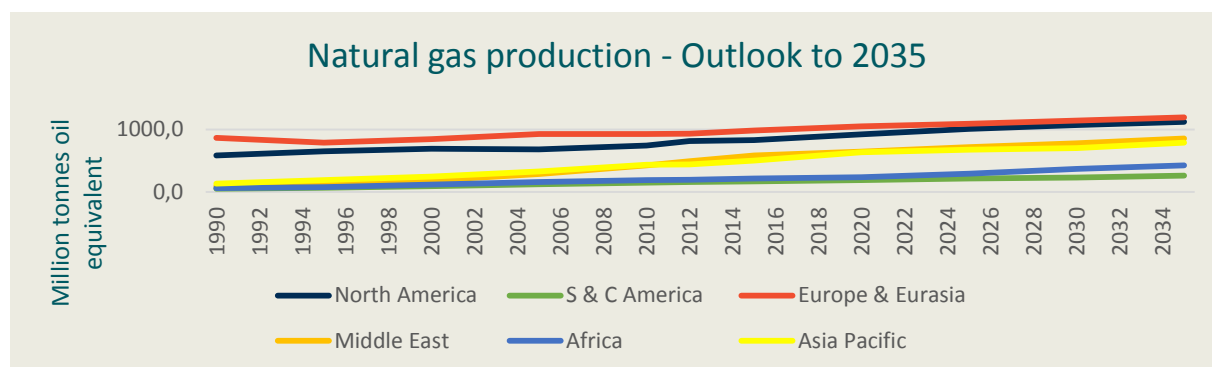
⁸⁴ http://trade.ec.europa.eu/doclib/docs/2011/september/tradoc_148201.pdf.

order to explain global trade flows. Figure 3-7 below indicates projected natural gas production towards 2035. It is important to note that output in Europe and Eurasia is increasing due to higher production in countries such as Russia, Azerbaijan, and Turkmenistan. European gas production is in fact expected to decrease by 46 % by 2035⁸⁵. The US and Canada contribute to a continued increase in natural gas production in North America. Australia is likely to increase its share of natural gas production and trade, with three LNG export terminals currently operational and an additional seven under construction⁸⁶.

In order to assess LNG supply in particular, we need to look at Qatar, the world's most significant LNG exporter. In 2013 the country accounted for roughly one third of global trade flows⁸⁷. It currently has a moratorium on natural gas developments prohibiting the production of LNG plants. This is likely to be lifted in 2015, adding significant supply of LNG to the market⁸⁸.

In south-east Asia, Singapore is planning on building a second LNG terminal, with the aim of becoming a world leading natural gas hub⁸⁹. An important fact for US LNG export to Asia is that the Panama Canal is currently too small to accommodate all types of LNG tankers. The waterway is therefore being expanded in order to fit ships 1200 feet long and as wide as 160 feet⁹⁰. Trips from the Sabine Pass facility in Louisiana to East Asia will be cut from 63.6 days to just 43.4 days⁹¹. This creates an even stronger case for exporting US LNG to the Asian market.

Figure 3-7: Natural gas production (Mtoe) – Outlook to 2035



Source: BP energy outlook 2035: Excel table.

On average, global consumption of natural gas is expected to increase. Figure 3-8 below describes the projected global natural gas consumption to 2035. The demand for natural gas and LNG is driven by⁹²:

⁸⁵ <http://www.bp.com/en/global/corporate/about-bp/energy-economics/energy-outlook/country-and-regional-insights/european-union.html>.

⁸⁶ <http://www.appea.com.au/oil-gas-explained/operation/australian-lng-projects/>.

⁸⁷ BP statistical review of world energy 2014.

⁸⁸ <http://www.eia.gov/countries/cab.cfm?fips=qa>.

⁸⁹ <http://www.bloomberg.com/news/2014-02-25/singapore-plans-to-build-second-lng-terminal-in-country-s-east.html>.

⁹⁰ <http://www.bloomberg.com/news/2013-11-05/panama-canal-s-lng-surprise-to-redefine-trade-in-fuel-freight.html>.

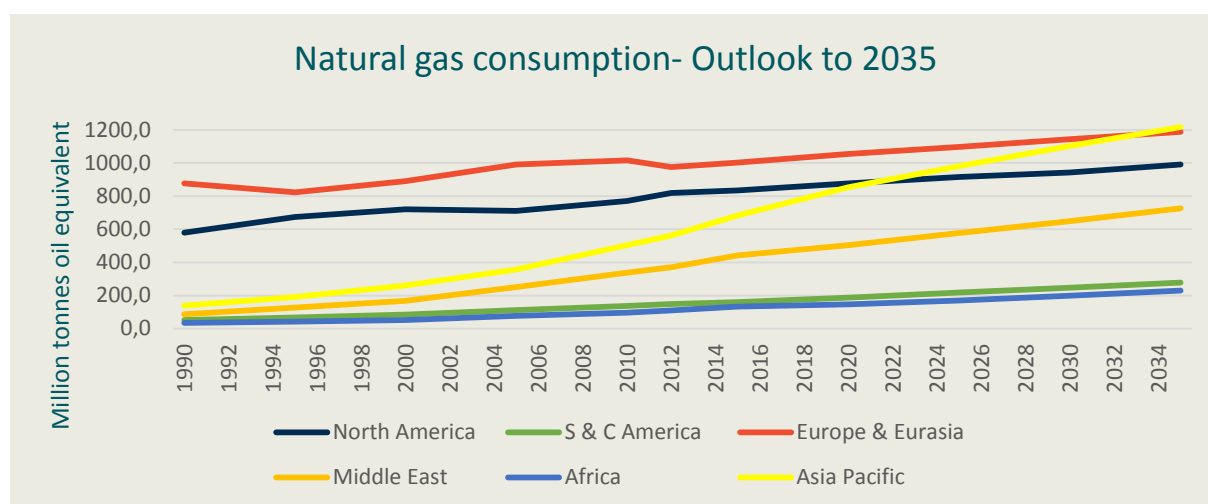
⁹¹ <http://www.wallstreetdaily.com/2014/03/10/panama-canal-lng-exports/>.

⁹² [http://www.ey.com/Publication/vwLUAssets/Global_LNG_New_pricing_ahead/\\$FILE/Global_LNG_New_pricing_ahead_DW0240.pdf](http://www.ey.com/Publication/vwLUAssets/Global_LNG_New_pricing_ahead/$FILE/Global_LNG_New_pricing_ahead_DW0240.pdf).

- Supply diversification efforts.
- Carbon reduction and air quality benefits.
- Reduced nuclear energy production (due to public opposition).

The figure indicates that the demand in Asia pacific is expected to rapidly increase over the following decades, overtaking Europe and Eurasia as the largest consumers of natural gas.

Figure 3-8: Natural gas consumption (Mtoe) – Outlook to 2035

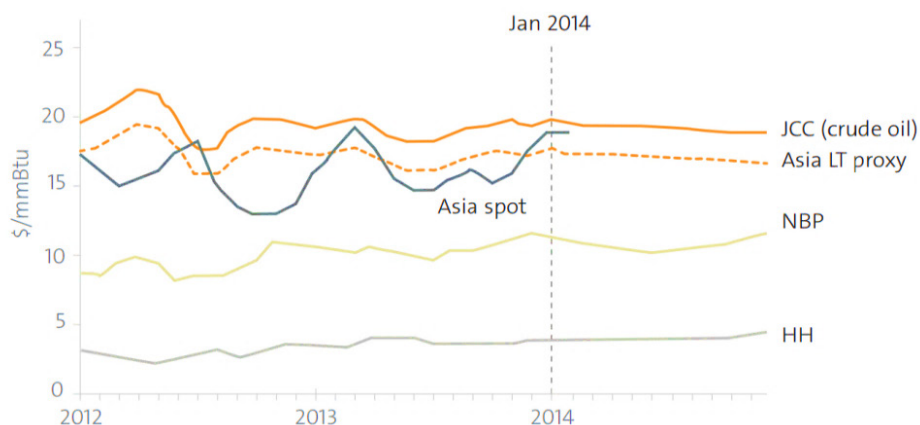


Source: BP energy outlook 2035: Excel table.

On a global level, there are historical price differences between the three regional markets (U.S, EU and Asia-Pacific). As shown by Figure 3-9, the spot market prices in Asia-Pacific are significantly higher compared to the EU market. The price discovery mechanisms that are in place in these markets are oil-link in the Pacific, gas-to-gas competition in the US and a hybrid system in Europe with a strong oil indexation element). The natural gas that will become available in the US is not likely to go to the EU, but is expected to predominantly move to the Asia-Pacific region, where higher export margins can be obtained. This has been historically true, and the current known US-based LNG export contracts confirm this situation. Demand from both China and India will be significant drivers of this demand. As of June 2014, a fair share of their expected output is already sold, and about 75 % of all export volumes is contracted to go to the Asia-Pacific market⁹³. Companies in Spain (Repsol), France (Total) and the U.K. (BG) are the only entities known to have signed long-term (20 year) Liquefaction Tolling Agreements (LTAs) from LNG facilities that have received U.S. DoE approval to export gas to non-FTA countries⁹⁴.

⁹³ CCAN, 2014, Analysis of DOE-approved LNG contracts, June 2014.

⁹⁴ Spain: 4.8 bcm / annum with Gas Natural Fenosa, U.K.: 2,4 bcm / annum with Centrica, France: 6 bcm with GDF SUEZ S.A.

Figure 3-9: Global Spot Prices^{95,96}

Source: BG-group: LNG Global trade summary.

Conclusion

The potential for natural gas exports to the EU will increase as the EU becomes classified as an FTA entity. This means that the lengthy application process for American companies will disappear, in combination with an increase in export capacity from 1bcm/day to 1.12bcm/day⁹⁷. However, the advantages of gaining FTA status for LNG exports are diminishing due to US regulatory changes which will also speed up the approval process for non-FTA countries. This increases the probability that a majority of US LNG exports will most likely be displaced to emerging markets in the Asia Pacific with higher spot prices. This prediction can be reinforced by the potential implementation of the Trans-Pacific partnership, which will connect the US to attractive emerging economies in the east.

It is important to note that the restrictions on LNG exports in the US are not likely to be completely eliminated, due to a clear divide in interests between politicians, industry associations and the public. However, a significant change that should be stressed is whether markets are contestable or not. The US transformation from gas importer to net exporter will make global markets more contestable. This change will be further enhanced by changes in the business models for LNG exports, towards the 'tolling' model as opposed to the traditional vertically integrated model associated with green-field gas development and liquefaction. Therefore, even if the TTIP does not bring LNG to the shores, it will still contribute to a more liquid and contested market for natural gas. It is possible that this could in turn change the price formation mechanism in Europe, away from the current hybrid model - between gas-to-gas competition and Long Term Contracts. LNG can have a positive effect on this model, bringing more competitive pricing to the European market⁹⁸.

3.4. Market access and internal energy market impacts

In the following section, we describe how the TTIP affects market access for companies on both sides of the Atlantic. We begin by assessing the impacts on Foreign Direct Investment, followed by an analysis of the implications of including the debated Investor-state dispute settlement mechanism (ISDS) in the agreement. We also discuss which energy policy areas might be difficult to harmonise, with particular attention on the Fuel

⁹⁵ HH = Henry Hub (US) NPB = National Balancing Point (UK) JCC = Japans Custom Cleared Crude.

⁹⁶ http://www.bg-group.com/assets/files/cms/A3319_BG_LNG_flyer_v6.pdf.

⁹⁷ <http://www.iie.com/publications/pb/pb14-19.pdf>.

⁹⁸ <http://www.economist.com/node/21558456>.

Quality Directive. Finally, we look at the effects on the internal energy market in terms of grid access.

What would the consequences be for EU and US companies access to the exploration and production of energy resources on the other side of the Atlantic?

Access can be expected to increase, as the TTIP should simplify the mobilisation of companies overseas, by harmonising legislation for Foreign Direct Investment (FDI)⁹⁹. The problem as it is perceived and discussed in Europe is not just one of investors' rights but also includes essential considerations on how the TTIP may tilt the balance between states (meaning EU states) and investors (more generally the private sector). The discussion is not limited to what a trade negotiator would normally consider. The agreement is likely to include standard provisions which affect investors. First of all, EU and US investors will be granted most-favoured-nation treatment. This obliges the parties of the agreement to treat foreign investors of one country no more favourably than investors of the other party of the agreement. Secondly, the TTIP is likely to include provisions on national treatment. This prohibits more favourable treatment of domestic compared to foreign investors, meaning that EU investors cannot be treated differently than their US counterparts and vice-versa. Furthermore, the TTIP will include a Fair and Equitable Treatment (FET) provision. This aims to ensure due process in decision-making and respect investors' legitimate expectations. Investors are protected by expropriation provisions, which is understood as the outright taking of property by the state, these have been the main focus of international investment law throughout the 20th century.

The above mentioned measures will be positive for Foreign Direct Investment (FID). FID can be done in different ways, such as setting up a subsidiary or associate company, or acquiring shares of an overseas company, through a merger or joint venture. American companies, such as Chevron and Exxon Mobil, are already highly involved in the extraction of natural gas and crude oil resources in Europe. This is normally done through their subsidiary companies^{100,101}. The same case applies for European enterprises such as Shell and BP which both operate in the US^{102,103}. In total there are eight foreign oil and gas companies extracting resources in the US, many through joint ventures with American companies¹⁰⁴.

There is potential for harmonisation of FDI legislation. The left panel of figure 3-10 indicates that the US is very open to FDI, and is by far the most significant target country for EU funds. The European market on the other hand, is only relatively open. As of July 2014, the US has presented an initial offer on services and investment, and an EU offer will be presented in the near future¹⁰⁵.

By removing barriers to investments, both EU and US oil and gas companies are able to gain increased access overseas. Investment can take place upstream (exploration), mid-stream (gathering, transportation), downstream (refining) or in oilfield services¹⁰⁶. This

⁹⁹ http://www.ofii.org/sites/default/files/docs/OFIG_TTP_TTIP_White_Paper.pdf.

¹⁰⁰ http://www.exxonmobil.com/Europe-English/Files/EM_In_Europe_2012.pdf.

¹⁰¹ <http://www.chevron.com/>.

¹⁰² <http://www.bp.com/en/global/corporate/about-bp/bp-worldwide/bp-in-america/our-us-operations/exploration-and-production/north-america-gas.html>.

¹⁰³ <http://www.shell.us/aboutshell.html>.

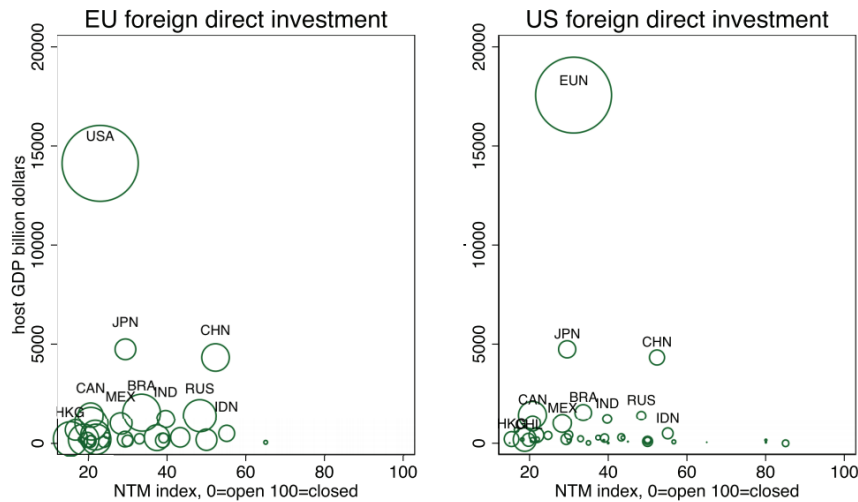
¹⁰⁴ <http://www.nrdc.org/land/drilling/files/fracking-land-leases-FS.pdf>.

¹⁰⁵ http://trade.ec.europa.eu/doclib/docs/2014/july/tradoc_152666.pdf.

¹⁰⁶ Ernest and Young (2012) The FIRPTA investment guide For foreign investments in certain US oil and gas assets.

could become significant for the extraction of European shale gas resources, which some experts claim has been limited due to lack of expertise¹⁰⁷. Furthermore, the TTIP will speed up the investment process, from planning and approval to implementation.

Figure 3-10: Income from FDI, market size and openness, 2007-2009¹⁰⁸



Source: CEPR (2014).

Would full market access be granted?

The TTIP cannot be expected to bring “full market access” (i.e. removal of all tariffs and NTMs), as there are areas of legislation that are difficult to harmonise between the EU and the US. In terms of energy trade, the FQD is a prime example where there will be complications, as the directive is not in line with US legislation.

Market access can be defined as the openness of a foreign market for goods and services¹⁰⁹. This is affected by conditions such as tariff and non-tariff measures that are agreed upon between the trading countries¹¹⁰. As shown by figure 3-11 below, the overall trade cost mainly consists of these types of non-tariff barriers. Tariffs are simply import taxes whereas non-tariff measures refer mainly to the harmonisation of regulation, legislation and standardisation¹¹¹. Removing normal tariffs can be considered quite simple, especially for energy goods as they are near to non-existent between the EU and the US. However, the differences in legislation between the EU and the US regarding environmental standards of energy sources could prove more difficult to harmonise. This is explained in detail in the case study on the Fuel Quality Directive below.

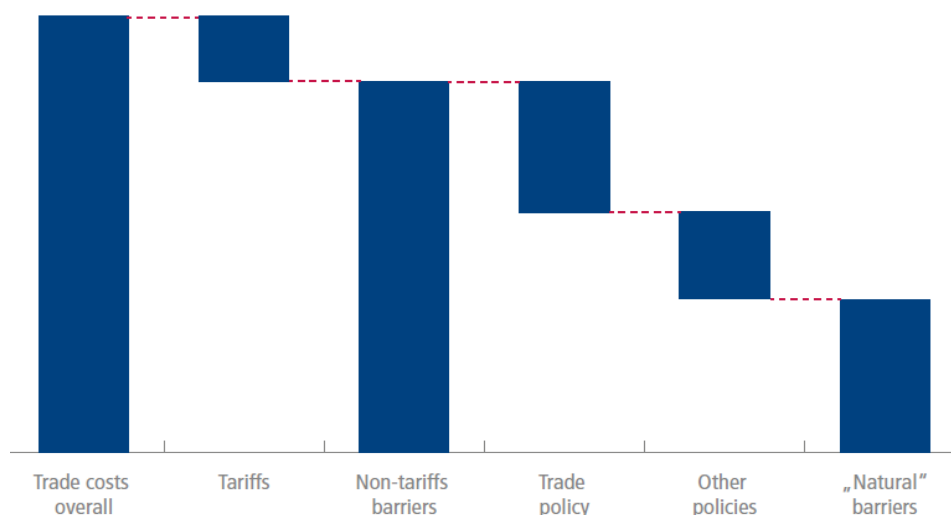
¹⁰⁷ https://www.foeeurope.org/sites/default/files/foee_slow_and_costly_road_may2013.pdf.

¹⁰⁸ Centre for Economic Policy Research (CEPR) (2013) Reducing Transatlantic Barriers to Trade and Investment An Economic Assessment.

¹⁰⁹ <http://www.businessdictionary.com/definition/market-access.html>.

¹¹⁰ http://www.wto.org/english/tratop_e/markacc_e/markacc_e.htm.

¹¹¹ <http://trade.ec.europa.eu/doclib/press/index.cfm?id=918>.

Figure 3-11: Measuring overall trade costs¹¹²

Source: Felbermayr et al. (2013).

Box 3-4: Case Study: Fuel Quality Directive

There is currently an overriding issue between the EU and the US related to sustainability policies which are embodied in the EU's Fuel Quality Directive (FQD) and related plans. The Fuel Quality Directive (FQD) sets a 6 % reduction target in the carbon intensity of transport fuels to be met by 2020¹¹³. This is a technology-neutral target that leaves options open to the industry to meet it in the most effective and efficient way. The dispute is about Article 7A of the FQD, which would effectively ban tar sands from Europe. The article assigns carbon intensity to all fossil fuel feedstock, namely: tar sands, coal-to-liquid, oil shale, gas-to-liquid and conventional oil. The specific 'default value' for tar sands is higher than that of other crudes currently used in EU refineries. It foresees a 107gCO₂/MJ emissions value for oil sands versus 87.5 g CO₂/MJ for "conventional" crudes (a difference of 23 %). The American/Canadian oil industry have already expressed their concerns about this matter, and argue that oil sands derived crudes fall well within the band for production GHG emissions for all crudes used in the EU, thus the difference of 23 % should be removed¹¹⁴. This would make it easier for US refineries to export oil to Europe that has been extracted from the Canadian oil sands. Oil sands is currently a topic in the TTIP negotiations after intensive lobbying from Canadian oil companies. There have been rumours about scrapping the FQD, but this has developed into a Commission proposal of simply "watering down" the directive, through making it optional for fuel suppliers to report on the carbon intensity of their products^{115,116}. In addition, the Fuel Quality directive has not been extended beyond 2020, but it has still to be discussed in the 2030 climate package.

¹¹² Felbermayr et al. (2013) Transatlantic Trade and Investment Partnership (TTIP) - Who benefits from a free trade deal?

¹¹³ <http://ec.europa.eu/environment/air/transport/fuel.htm>.

¹¹⁴ Multi-Association letter regarding EU Fuel Quality Directive, RE: U.S. Stakeholders Opposition to the Proposed Modifications to Article 7a of the EU Fuel Quality Directive (98/70/EC), 20 May 2013.

¹¹⁵ <http://www.euractiv.com/sections/energy/tar-sands-mystery-and-smoking-ttip-gun-301552>.

¹¹⁶ <http://www.euractiv.com/sections/energy/fqd-oily-tunnel-will-there-be-light-end-302921>.

Would the choice of a country to allow or restrict the exploitation of its energy resources be affected (for instance via investor-state dispute settlements (ISDS))?

The investment protection mechanism was introduced in the Treaty of Lisbon and is likely to be included in the TTIP. Considering that ISDS is already being used for these purposes between EU member states under the provisions of the Energy Charter Treaty (ECT), it is likely that the TTIP would provide the same rights for US companies. Foreign multinationals can already use this right through their European subsidiaries. Commissioner designate for trade Cecilia Malmstrom has potentially rejected the need for ISDS in the TTIP, but it remains unclear whether she is on the same page as president elect Juncker on this topic¹¹⁷.

Box 3-5: Investor-state dispute settlements

Investor-state dispute settlements (ISDS) is a procedural mechanism provided for in international agreements on investment. Countries sign such agreements in order to set out ground rules when foreign companies invest on their territory, for example by building factories¹¹⁸. In order to bring a case, an investor must claim that the Party has breached rules set out in the agreement. Claims are heard in front of an independent international tribunal¹¹⁹. In most cases, the panel consists of three arbitrators, two of whom are selected by each party, with the third chosen by mutual agreement¹²⁰.

European NGOs have voiced concerns regarding ISDS in the TTIP, particularly in relation to the extraction of energy sources. For example, some European member states have banned the use of hydraulic fracking of shale gas due to concerns over its environmental impact. France and Bulgaria became the first countries to enforce this legislation and countries such as Germany and the Czech Republic have proposed a moratorium on the matter¹²¹. If the ISDS is included in the TTIP, environmental policies might be disputed by international energy companies where they have made investments. However, this issue is already evident on a European level, legislated by the Energy Charter¹²². As much as 80 % of all European ISDS cases have been launched under this treaty, as in the case of "Vattenfall". The Swedish energy company sued Germany in 2011 after the government decided to ban nuclear energy, forcing Vattenfall to close down its operations. This case is still pending. It also disputed German environmental restrictions in 2009 regarding water use, claiming 1.4EUR billion in compensation. However, this dispute has been settled, with no compensation to Vattenfall.

The European Environmental Bureau (EEB) claims that the inclusion of ISDS in the TTIP could worsen this situation, giving US companies the right to this type of legal action¹²³. This is problematic, since the use of ISDS by foreign investors, especially from developed countries, has been increasing worldwide. In 2012, 31 % of cases were decided in favour of the investor, 42 % in favour of the state and approximately 27 % were settled¹²⁴. There are an abundance of cases on the international level where ISDS has been used by energy companies, such as the case of Lone Pine vs. Canada regarding the ban of fracking under

¹¹⁷ <http://openeuropeblog.blogspot.nl/2014/09/malmstrom-impresses-in-her-hearing-but.html>.

¹¹⁸ http://trade.ec.europa.eu/doclib/docs/2013/october/tradoc_151791.pdf.

¹¹⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/311247/bis-14-695-faqs.pdf.

¹²⁰ Thompson, G (2013) Investor-state dispute settlement (ISDS) and the Transatlantic Trade and Investment Partnership (TTIP) House of Commons Library.

¹²¹ <http://keeptapwatersafe.org/global-bans-on-fracking/>.

¹²² <http://www.encharter.org/>.

¹²³ Personal communication with Peter de Pous, European Environmental Bureau (16th of September 2014).

¹²⁴ http://unctad.org/en/PublicationsLibrary/webdiaepcb2013d3_en.pdf.

the provisions in NAFTA; and Pacific Rim vs. El Salvador on water protection under the Central America Free Trade Agreement (CEFTA)¹²⁵. As mentioned above, EU countries are able to apply ISDS through the ECT. How the TTIP will build on the ECT in energy is a major consideration for the negotiations.

The debate on the ISDS has become so polarised that the Commission decided to postpone the negotiations with the US on this chapter and launched a public stakeholder consultation¹²⁶. However, the main focus of the consultation is on how to make ISDS an efficient mechanism, rather than asking the question of whether or not it should be included in the agreement. The commission admits that the mechanism needs oversight, as the procedure contains flaws such as "*lack of transparency, inconsistencies of arbitral awards, high costs of procedures and the existence of parallel and frivolous claims*"¹²⁷. The EU has agreed on new legislation on the matter, but it has yet to enter into effect¹²⁸.

It is important to note that the outcomes of ISDS in the CETA agreement between the EU and Canada would also affect the EU-US relationship, as many American companies have business in Canada. If ISDS provisions are available in the CETA, these companies can apply the measure towards the EU member states through their Canadian subsidiaries.

What would the impact be on access to infrastructure for transport of energy goods (natural gas pipelines, electricity grids, etc.)?

Given the geographical conditions, neither electric grid interconnection nor pipeline links (the most controversial and difficult issues concerning third party access), are physically possible between the US and the EU. Therefore, the main uncertainty lies with access to LNG plants. The TTIP could simplify foreign investments in LNG terminals through the inclusion of most favoured nation and national treatment provisions. The clauses require non-discriminatory treatment of foreign companies. First of all, it is important to note that this problem does not concern US companies' usage of EU (LNG) re-gas facilities, as they are performing under capacity and would welcome additional business. It might be more difficult the other way around. The current Foreign Investment and National Security Act of 2007 restricts foreign investment in "critical infrastructure", with regard to national and energy security¹²⁹. It is unclear whether this has been an issue in the US for foreign investors. For example, if one looks at Qatar Petroleum's (QA) investment in the Golden Pass LNG terminal. The project is a joint venture with Exxon-Mobil and ConocoPhillips and QA hold 70 % of the total shares. Furthermore, the Cameron LNG project comprises of U.S.-based Sempra, which has a 50.2 percent stake and Japan's Mitsui & Co with a 16.6 percent stake. Mitsubishi Corp and Nippon Yusen KK together hold another 16.6 percent, with GDF Suez SA holding the remainder¹³⁰. By including most favoured nation and national treatment provisions in the TTIP EU companies can more easily gain access to LNG terminals in the US. These clauses were included in the CETA draft agreement, and they mean that the involved countries cannot discriminate foreign investors¹³¹. However, as mentioned earlier, the implications of this is unclear with regard to the TTIP and LNG terminals, as investments are already being made by international companies.

¹²⁵ <http://library.fes.de/pdf-files/iez/global/10875.pdf>.

¹²⁶ <http://www.euractiv.com/sections/trade-industry/commission-swamped-150000-replies-ttip-consultation-303681>.

¹²⁷ http://www.epc.eu/documents/uploads/pub_4637_isds_%26_ttip_a_miracle_cure_for_a_systemic_challenge.pdf.

¹²⁸ http://europa.eu/rapid/press-release_IP-14-951_en.htm.

¹²⁹ <http://www.pillsburylaw.com/siteFiles/Publications/AAD925536B75EBA801FDED8BF9B0F864.pdf>.

¹³⁰ <http://www.reuters.com/article/2014/08/07/usa-lng-cameron-idUSL4N0QD07A20140807>.

¹³¹ <http://www.iisd.org/itn/2013/06/26/the-draft-investment-chapter-of-canada-eu-comprehensive-economic-and-trade-agreement-a-step-backwards-for-the-eu-and-canada/>.

Box 3-6: Multilateral energy agreements

The Energy Charter Treaty (ECT) which came into effect in 1998 originally included most European countries, Russia and Australia. It is a treaty open to all countries wishing to participate and remains especially relevant in Eurasia. The contract (among other things) guarantees investment protection and sovereignty over each country's resources. It does not guarantee mandatory third party access (TPA) to grids and pipelines. The inclusion of TPA for certain facilities were discussed in an ambitious Transit Protocol, but was never finalised. Later on Russia, which only accepted provisional application of the ECT, withdrew from the agreement. Experts claim that this was due to the excessive normative EU influence¹³². The current rules for the **EU internal energy market**, require regulated third party access for all transmission and distribution infrastructure and for LNG facilities. Operators must give non-discriminatory access and in return they receive compensation. These terms are heavily regulated, especially in terms of cross border interconnectors. If such a connection would enhance energy supply and security or if it involves high financial risk, the infrastructure could be exempt from regulation. The Commission discusses the issue of third party access in its TTIP position paper on raw materials. In cases where investment in infrastructure is not allowed or economically feasible, third party access should be mandatory.

3.5. Implications for renewable and sustainable energy technologies

In this section, we commence by discussing the TTIP's impact on renewable energy technologies, with a special focus on wind energy. This is followed by an assessment of the effects on eco- and energy efficiency labelling schemes. Finally we discuss how standardisation could affect the sustainable energy sectors.

What could the implications be for transatlantic trade in sustainable energy technologies (for instance in the energy efficiency and renewable energy sectors)? The effects are likely to be positive for the highly competitive EU wind energy technology manufacturers, due to the likely removal of Local Content Requirements (LCR). Given the slight comparative disadvantage and trade deficit for EU solar energy technology towards the US, the effects for these industries are likely to be negative¹³³.

In the case of eco-design and energy labelling schemes we foresee few difficulties in harmonisation, as the main need is for coherence in the testing methods. The minimum requirements for allowing a product to enter the market can be individually set by the EU and the US. However, the recognition of US products standards might have potential drawbacks, as their standardisation process is implemented with less transparency and involvement of stakeholders compared to its EU counterpart¹³⁴.

Figure 3-12 and 3-13 below indicates the major global trade flows of solar and wind technology. China dominates the exports for solar panels while the EU and Japan are the major exporters of wind energy technology and components. In 2011, European companies accounted for 95 % of US imported wind-powered generating sets, in a trade worth roughly EUR 850 million. Denmark accounted for 55 % of the trade, followed by

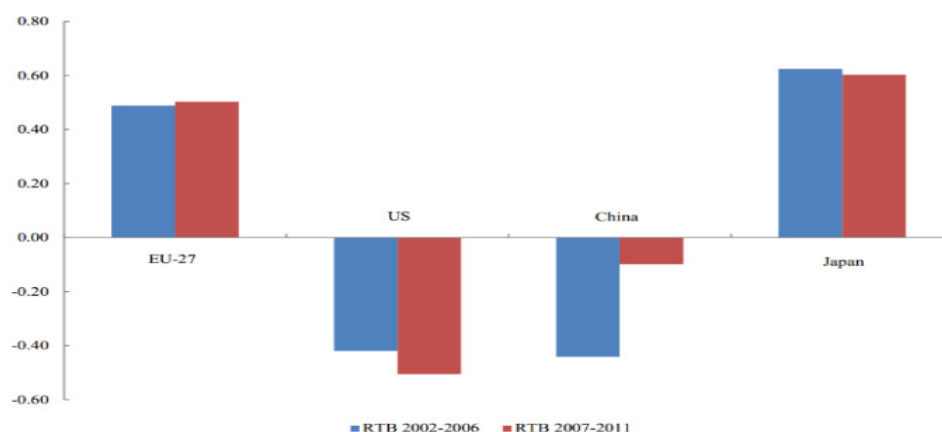
¹³² http://www.nortonrosefulbright.com/knowledge/publications/22691/russias_withdrawal_from_the_energy_charter_treaty.

¹³³ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

¹³⁴ Personal communication with Laura Degallaix – European Environmental Citizens Organisation for Standardisation (ECOS).

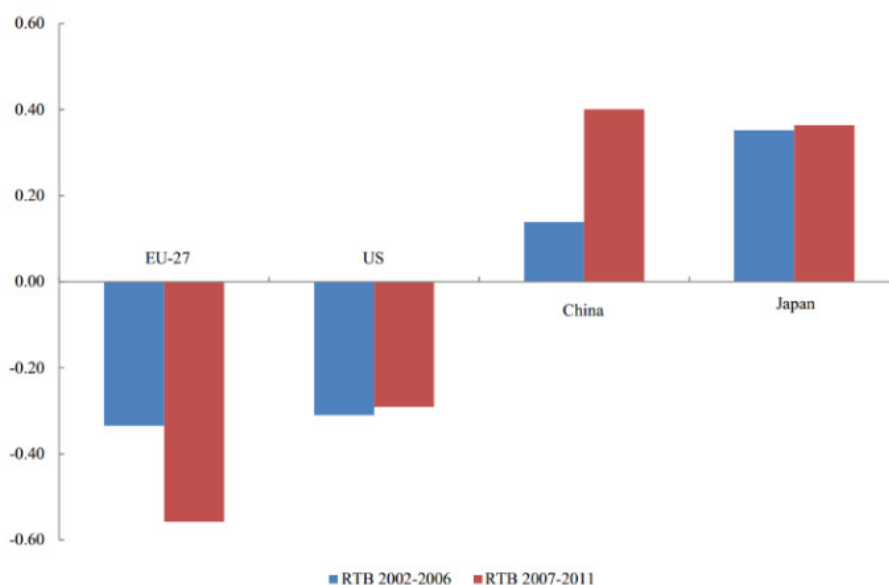
Italy, Germany and Spain which generated the remaining 40 %. In 2012, the EU-27 had a trade surplus in wind energy of around EUR 2.45 billion¹³⁵, compared to the US which has a significant trade deficit¹³⁶.

Figure 3-12 : Average relative trade balance Index of the wind industry in the EU-27, USA, China and Japan¹³⁷



Source: European Commission (2012).

Figure 3-13: Average relative trade balance Index of the solar industry in the EU-27, USA, China and Japan¹³⁸



Source: European Commission (2012).

¹³⁵ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

¹³⁶ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

¹³⁷ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

¹³⁸ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

Box 3-7: Case Study: Wind Energy

Wind power's share of total installed power capacity has increased five-fold since 2000; from 2.2 % in 2000 to 11.4 % in 2012. In the wind energy sector, Europe has the highest revealed comparative advantage (RCA) index in the world¹³⁹. A major trade barrier for the wind energy equipment sector is "local content requirements"¹⁴⁰ (LCR). This requires domestic or foreign companies to source a certain percentage of intermediate goods from local manufacturers or producers. It can also be implemented through subsidising local production. LCRs can be applied to both goods and services. The legislation is often motivated by the potential creation of green and local, jobs. On the other hand, LCRs do not allow for the optimal allocation of resources as it limits free trade. This type of market barrier is evident in the renewable energy sectors (mainly wind and solar) in the US and in some EU member states such as Spain, Italy, France and Greece. This led China to file a dispute before the WTO on Italy and Greece in 2012. Another example of such a dispute resulted in the WTO ruling against the Canadian state of Ontario which had LCR schemes in place which were not considered consistent with WTO commitments¹⁴¹.

The European Wind Energy Association claims that the TTIP can be expected to remove LCR mechanisms, as it is a non-tariff measure. The ban of LCR will most likely become systematically integrated in the agreement and become a prerequisite for other FTAs¹⁴². This would be beneficial for European wind power manufacturers. Furthermore, the French Multinational Alstom has voiced concerns regarding the controversial US "Jones Act"¹⁴³. The law requires that ships be **1)** built in the US, **2)** largely manned by a United States citizen crew **3)** 75 % owned by U.S. citizens, and **4)** fly the U.S.'s flag. This act benefits from massive political support in the U.S. as it is purely protectionist and designed to maintain the US maritime industry. Waivers are extremely rare and difficult to obtain: they are granted on a case-by-case basis in cases of national emergencies or in cases of strategic interest¹⁴⁴. This inhibits growth of wind energy companies wishing to develop in the US, as the lack of competition in the maritime industry leads to higher shipping costs, which in turn burdens companies with high expenses for transportation. The Jones Act was exempt from the NAFTA agreement and due to its political support in the US it is also likely to be excluded from the TTIP^{145,146}.

In terms of revealed comparative advantage, the EU is highly competitive in the wind energy sector, as indicated by figure 3-14. For solar energy, the EU has a trade deficit and a significantly lower RCA compared to the US, China and Japan¹⁴⁷. The negative trade balance has been increasing between 2002 and 2011, mainly due to significant imports from China. Since there is a slight disadvantage between the EU and the US, the removal

¹³⁹ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

¹⁴⁰ <http://www.ictsd.org/downloads/2013/06/local-content-requirements-and-the-renewable-energy-industry-a-good-match.pdf>.

¹⁴¹ http://www.ewea.org/news/detail/2012/12/20/wto_rules_against_ontario_local_content_requirement_for_renewables/.

¹⁴² Personal communication with Vilma Radvilaitė and Pierre Tardieu, European Wind Energy Association (16th of September 2014).

¹⁴³ Formally known as the Merchant Marine Act of 1920.

¹⁴⁴ http://www.maritimelawcenter.com/html/the_jones_act.html.

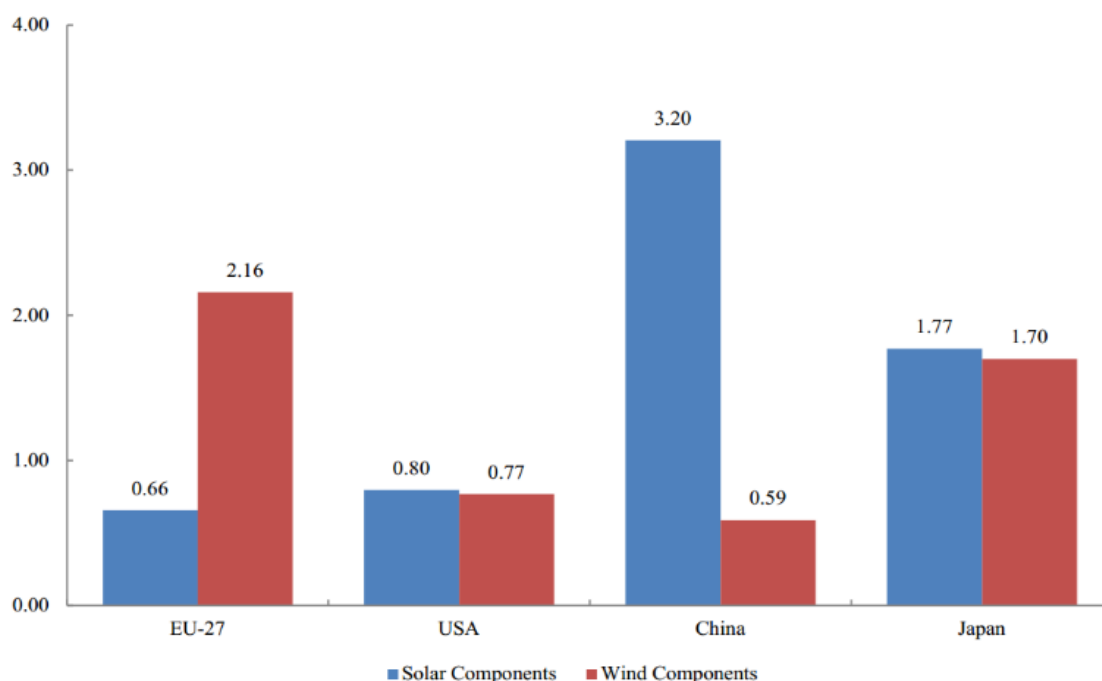
¹⁴⁵ http://www.heritage.org/research/reports/2014/05/sink_the_jones_act_restoring_americas_competitive_advantage_in_maritime_related_industries.

¹⁴⁶ <http://new.grassrootinstitute.org/2014/07/the-jones-act-and-the-international-cost-of-protectionism/>.

¹⁴⁷ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_en.pdf.

of tariffs and NTMs would be negative for the EU solar industry, as their products could be displaced by US imports.

Figure 3-14: Average Revealed Comparative Advantage Indexes of solar and wind industries in the EU- 27, USA, China and Japan from 2007 to 2011



ECO-design, Energy labels and Standards

The eco-design and energy-labelling directives are key instruments in order to promote sustainable technologies in the EU, and there are currently 40 measures in place¹⁴⁸. This has given European companies a leading global role in the production of energy efficient products.

The office of United States trade representatives (USTR) have expressed concerns regarding EU labelling schemes, and claim that they act as significant barriers to trade¹⁴⁹. In order to remove these barriers it would be necessary to harmonise legislation. European NGOs claims that by harmonising legislation the EU would need to remove environmental labelling¹⁵⁰, but this seems to be an unjustified claim. This is due to the fact that there are possibilities to find convergence in other ways, and the minimum requirement for market access can be individually decided by the EU and the US. It is important to note that both the EU and the US regulate products through minimum energy efficiency and labelling schemes. However, the legislation is implemented differently¹⁵¹.

The Swedish industry association "Teknikforetagen" (IBM, Volvo, Electrolux etc.) claims that lower environmental standards will not be necessary as there are simpler ways to achieve harmonisation, such as by finding divergence in how energy efficiency is

¹⁴⁸ Braungardt et al. (2014) Impact of Ecodesign and Energy/Tyre Labelling on R&D and technological innovation.

¹⁴⁹ <http://www.ustr.gov/sites/default/files/2013%20TBT.pdf>.

¹⁵⁰ <http://europeangreens.eu/brussels2014/content/position-paper-ttip>.

¹⁵¹ <http://www.transatlanticbusiness.org/wp-content/uploads/2014/05/TABC-Innovation-in-TTIP-Dec-16.pdf>.

measured. Teknikforetagen means that the issue mainly lies with the testing methods used for energy efficiency labels, i.e. kWh/year used to operate a refrigerator or kWh/60° per washing cycle for a washing machine. For example, a refrigerator proven efficient in Europe by using IEC standards as specified in the eco-design directive, must go through expensive and time-consuming re-testing in the US. In addition, products often need to be remodelled to make sure they fit the specific test standard. As a result, consumers get a higher price product and the most efficient products might not be introduced to the market on the other side of the Atlantic. If the standardisation process is to be harmonised, it would be the responsibility of EU and US legislators to decide the minimum requirement for energy efficiency in order to gain market access. An example on how the labelling schemes compare is shown by figure 3-15 below¹⁵².

The European Environmental Citizens organisation (ECOS) claims that there are currently no barriers to international standardisation, considering that the European Committee for Electrotechnical Standardization CENELEC adopt as much as 75 % of their standards based on the International Electrotechnical Commission (IEC) requirements¹⁵³. However, ECOS has voiced concerns regarding the differences in EU-US regulatory processes¹⁵⁴. During the creation of a European standard, national committees will liaise with their stakeholders such as industry, federations, consumer associations and certification bodies¹⁵⁵. ECOS claim that the European process is much more transparent and inclusive than its US counterpart. By recognising US products standards products there is also a risk of accepting a less qualitative standardisation procedure which does not involve all relevant stakeholders. US authorities can choose to refer to any US standard, developed by any Standards Developing Organisation (SDO) established in the US whatever their membership and governance process. Moreover, when a standard is referred to in US legislation, other standards covering the same products can co-exist, even if they were developed by other SDOs. One of the strengths of the European standardisation system is that when a European standard is developed, be it referred to in legislation as providing presumption of conformity or not, all national potentially conflicting standards shall be withdrawn. Furthermore, the European standardisation system is based on EU Regulation 1025/2012 which aims to improve the effectiveness and transparency of the system and, more importantly, to ensure balanced stakeholder representation and active participation of SMEs and societal stakeholders in the system.

¹⁵² Stina Wallstrom at Teknikforetagen, Personal communication (10 of September 2014).

¹⁵³ CENELEC homepage "Cooperation with IEC" <http://www.cenelec.eu/aboutcenelec/whowere/globalpartners/iec.html>.

¹⁵⁴ Personal communication with Laura Degallaix - The European Environmental Citizens organisation (ECOS) 03-10-201.

¹⁵⁵ <http://www.cenelec.eu/aboutcenelec/whatwedo/standardsmakingprocess/index.htm>.

Figure 3-15: Energy labelling comparison EU - US¹⁵⁶

Energy class defined by common test method	Marking in EU	Marking in US
More efficient		Low estimated Yearly operating cost
10		
9		
8	A+++	
7	A++	\$67
6	A+	
5	A	
4	B	
3	C	
2	D	
1		High estimated yearly operating cost
Less efficient		

Source: Teknikforetagen (2014).

What would the convergence of regulatory standards mean for the sustainable energy sectors?

With regard to the TTIP, EU companies will become able to gain access to new markets and potentially increase their market share. If there are standards in place, this sends clear signals to the manufacturing industry which could in turn facilitate investments in the sector. This could be beneficial for the renewable industry. In addition, by applying environmental standards to products, their climate impact can be limited¹⁵⁷. The issue of standardisation has been visible in Europe, especially in relation to electric vehicles (EV). Without standards in place there were difficulties for vehicles to become interoperable throughout the whole of EU, limiting market access. The European commission set out to standardise charging points for electrical vehicles (EV) in 2010 without reaching any consensus. Another proposal was made, and agreed on, in 2013 through the "Directive on Alternative Fuels Infrastructure"¹⁵⁸. Regarding the TTIP, vehicle manufacturers are proactively working on a transatlantic standard for sockets and plugs, which are necessary for electric charging^{159,160}. This is expected to boost the EV market in the US and the EU as both have domestic manufacturing of these types of vehicles. Experts claim that standardisation drives battery technology research and innovation¹⁶¹.

The solar industry is also in need of standardisation. The market is growing rapidly and new manufacturers use a variety of different applications and processes. With standards in place, the industry could better cope with growing demand¹⁶². Lack of standards for grid safety, connecting and operating solar panels, are evident in Germany, Spain and Portugal¹⁶³. In France, the grid connections process is not linked to a single law, making it

¹⁵⁶ Stina Wallstrom at Teknikforetagen, Personal communication (10 of September 2014).

¹⁵⁷ <http://www.iso.org/iso/home/standards/benefitsofstandards.htm>.

¹⁵⁸ COM(2013) 18 Final: "Directive on alternative fuels infrastructure".

¹⁵⁹ http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151605.pdf.

¹⁶⁰ <http://www.sciencebusiness.net/news/76496/TTIP-of-the-iceberg-for-energy-growing-expectation-gaps-for-EU-US-trade-deal>.

¹⁶¹ <http://www.eurelectric.org/EVDeclaration/Declaration.html>.

¹⁶² <http://www.usitc.gov/publications/332/pub4421.pdf>.

¹⁶³ http://helapco.gr/pdf/PV_LEGAL_final_report_2012.pdf.

possible for grid operators to set their own standards. Applying standards for the solar industry could promote both intra-EU and transatlantic trade.

3.6. Conclusions

In this chapter, we discussed several questions regarding the potential impacts of TTIP on the EU energy sector that were grouped into the areas of trade and competitiveness, security of supply, market access and internal market and sustainable energy.

Regarding **trade and competitiveness**, we noticed that overall tariff barriers in the energy sector are low, but that there are four major areas of non-tariff barriers: the US export bans on oil and gas, the EU Fuel Quality Directive, EU climate policies and local content requirements. It is likely that the existing US tariffs on refined products will be reduced due to the TTIP, with a resulting increase in trade between the US and EU. Existing tariffs on wind on EU and US sides might also be reduced as well as local content requirements, from which the EU wind energy industry might benefit.

However, the extent to which other non-tariff barriers will be affected by the TTIP remains an open question. For instance, whether or not US export bans on oil and gas will be lifted within the TTIP is highly uncertain. Such a lifting would be particularly appreciated by EU industry in order to allow imports of cheap shale gas in the form of LNG from the US, but US consent to such exports might be politically contested due to US fears over domestic security of supply and expected increases in gas prices in the US. Even if the US allowed gas exports, due to higher gas prices in Asia –particularly Japan - most US LNG might be exported there rather than to the EU.

A point of concern from the EU perspective regarding climate policies is to what extent the Fuel Quality Directive might be affected by the TTIP. If standards were lowered, imports of Canadian heavy oils from tar sands might increase, with negative effects for EU greenhouse gas emission levels. In this respect coal imports from the US are also important. These have increased in recent years due to shale gas developments in the United States. As tariffs on coal are presently already at zero, there are no impacts of the TTIP itself to be expected however – unless the TTIP also extended to the EU ETS system, which does not seem likely.

With regard to **security of supply**, the main point to be considered is the extent to which the TTIP will result in increased LNG imports to the EU. It is far from sure that the TTIP will indeed lead to increased shipping to the EU, as gas prices in Asian economies are currently far more attractive to potential US exporters. On the other hand, for EU energy intensive industries the availability of US LNG would be an important asset to diversify supplies, and therefore an encouragement of the inclusion of LNG provisions in the TTIP might be expected. In this respect it is also important to see what the outcomes of the current US trade negotiations with the Asian area will be. It is important to note that even though the supply of LNG would not significantly increase, energy security may still improve. Regardless of whether or not the advantages of the TTIP could be exercised due to the current market conditions, the agreement would bring new potential diversity of energy sources to Europe, albeit to a limited extent.

Security of gas supply to the EU is a particular issue for the Eastern Member States, which are predominantly dependent on Russian gas imports. Therefore, for security of supply, TTIP should be seen in close conjunction with the construction of LNG terminals in those Member States as well as the current construction of reverse-flow pipelines within the EU. TTIP will only improve the security of supply if it is accompanied by sufficient measures that allow for gas to be transported to the places within the EU where it is most needed in

case of a crisis. This will be more important than any additional crisis mechanisms under the TTIP, although no such mechanisms are presently envisaged.

Market access and internal market issues are also important with respect to the TTIP. As a result of an agreement, Foreign Direct Investment (FDI) in the US as well as the EU might increase. As the United States legislation is more open to FDI than that in the EU, the largest increase of FDI might well occur in the EU. A particularly contested issue regarding market access is the Investor-State Dispute Settlement mechanism (ISDS), for which the European Commission has already launched a public stakeholder consultation. The ISDS might affect the ability of individual Member States to pursue national energy policies. This has already been demonstrated in the case of Vattenfall disputing Germany's ban on nuclear energy and it could be repeated in the future, for example if companies dispute national bans on fracking in France and other countries.

Trade in **sustainable energy technologies** will also be affected by the TTIP. There are currently tariffs on wind energy technologies in the US as well as in the EU, with those of the EU being higher than those in the US. There are also local content requirements which are likely to be lifted by the TTIP. As the EU wind energy industry is much larger than that in the United States, the main benefits are to be expected for the EU.

4. POTENTIAL IMPACTS OF THE TTIP ON THE MANUFACTURING SECTOR

This Chapter presents the TTIP's relation to the manufacturing sector. First of all, we present the tariffs and non-tariff barriers along with the current trade balances between the EU and the US. This is followed by an analysis of the general impacts on the industries and the member states in chapter 4.2. We then go into more detail and provide insights into the energy intensive sectors, and what the potential outcome could be for SMEs (4.3). In chapter 4.4 we discuss the TTIP in relation to the internal market, followed by the impacts on the work force in terms of labour rights and employment (4.5). Finally, we assess the impacts on innovation, with special attention to property rights and standardisation, and also the long-term implications of the TTIP.

4.1. Introduction

In terms of gross value added, the share of the manufacturing sector in the EU has been declining over the last years few years. Manufacturing industries in the EU accounted for 18 % of gross value added in 2000, but this steadily declined to about 15 % in 2012¹⁶⁴. The crisis has had a negative impact on manufacturing industries as a whole. Since 2008, 3.5 million jobs have been lost in the sector, and the EU's productivity performance has taken a blow due to increased competition from outside the EU. This trend of a declining share of the manufacturing industry in the EU is largely related to the fact that the manufacturing industry faces cost disadvantages compared to its main competitors, notably in labour and energy costs. The decline is mainly due to an increase in competition from countries in Asia. That said, the EU manufacturing industry still accounts for over 80 % of Europe's exports and 80 % of private research and innovation¹⁶⁵.

Against this backdrop, the EC has stressed the need to stimulate an industrial renaissance and a greening of industry, in which sustainable energy and an energy efficient industry plays a key role. The main focus has been put on supporting the EU's leading manufacturing industries by speeding up investments in fast-growing sectors, in particular by "greening" industry¹⁶⁶.

The EU is however not the only entity adopting a strategy towards promoting the uptake of advanced manufacturing technologies. In 2011, U.S. President Barack Obama launched the Advanced Manufacturing Partnership to improve the competitiveness of U.S. manufacturing industry¹⁶⁷.

Definition

In order to define industrial activity in the manufacturing sector we refer to a comprehensive and compact method often by the commission. These sectors are considered part of the manufacturing industry by most of the studies used for our analysis. This classification includes:

Aerospace, Automotive, Biotechnology, Chemical, Pharmaceutical, Electrical and electronics, Metals, minerals and materials and Food and drink. In addition, for

¹⁶⁴ Eurostat.

¹⁶⁵ COM, 2014, For a European Industrial Renaissance, 014.

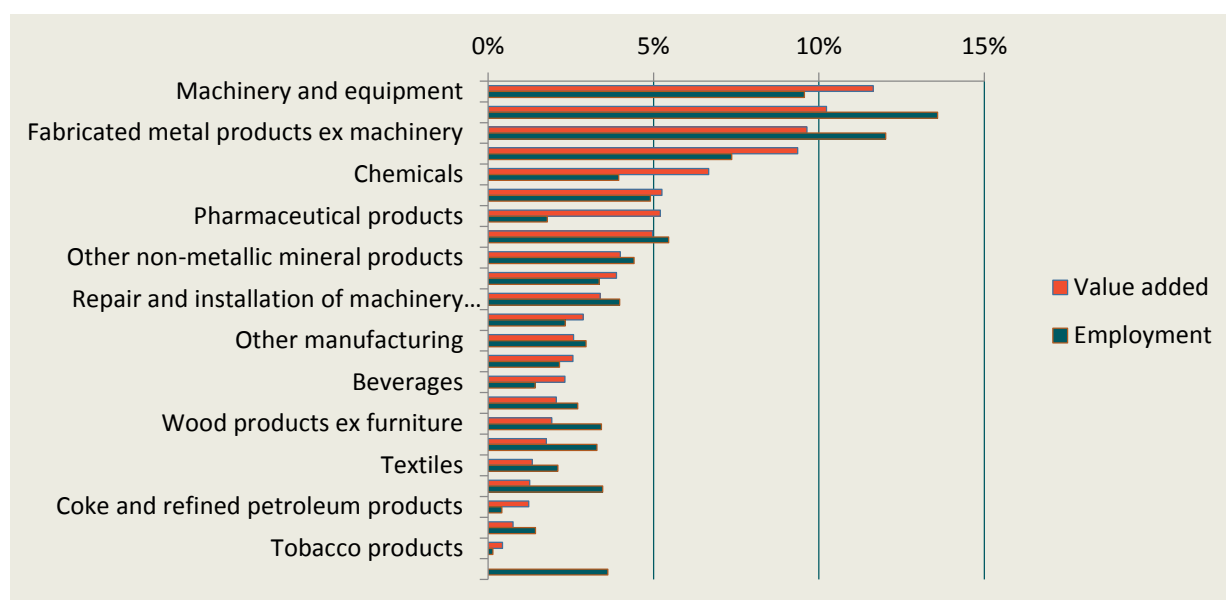
¹⁶⁶ Working Document "Advancing Manufacturing – Advancing Europe Report of the Task Force on Advanced Manufacturing for Clean Production.

¹⁶⁷ President's Council of Advisors on Science and Technology, 2012, Report to the President on Capturing Domestic Competitive Advantage in Advanced Manufacturing.

international trade of products the **SITC** classification is applied. **NACE** selection is used for certain tables but this is not the main classification method of this report as it is not as compatible with the studies which project the outcomes of the TTIP.

Figure 4-1 shows that the machinery and equipment industry has the highest value added within the EU manufacturing sector. Manufacturing of food products comes second, with the largest share of employment. Other large industries include fabricated metal products other than machinery, motor vehicles, and chemicals. These are the subsectors within the manufacturing industry that will be the focus of this chapter, as changes in these sectors have the biggest effect on the overall economy of the EU. There is no data available on value added for computer, electronic and optical products.

Figure 4-1: Sector analysis of EU manufacturing (% share of total), 2011 (NACE)¹⁶⁸



Source: Eurostat.

Trade costs

Two major features contribute to trade costs; tariffs and non-tariff measures (NTM). A tariff is essentially a tax on exports which varies depending on the type of product and the country of origin. NTMs come in many different forms and bring additional costs to trade via differing regulations and standards, for example by requiring companies to comply with dual standards depending on which country the product is sold.

Tariffs

The average level of import tariffs for manufactured products is only 1.7 % in the US and 2.3 % in the EU. Agricultural products are treated as a separate category and face much higher tariffs (on average 6.6 % (with 22 % on dairy) in the US and 12.8 % (with 45 % on meat) in the EU)¹⁶⁹.

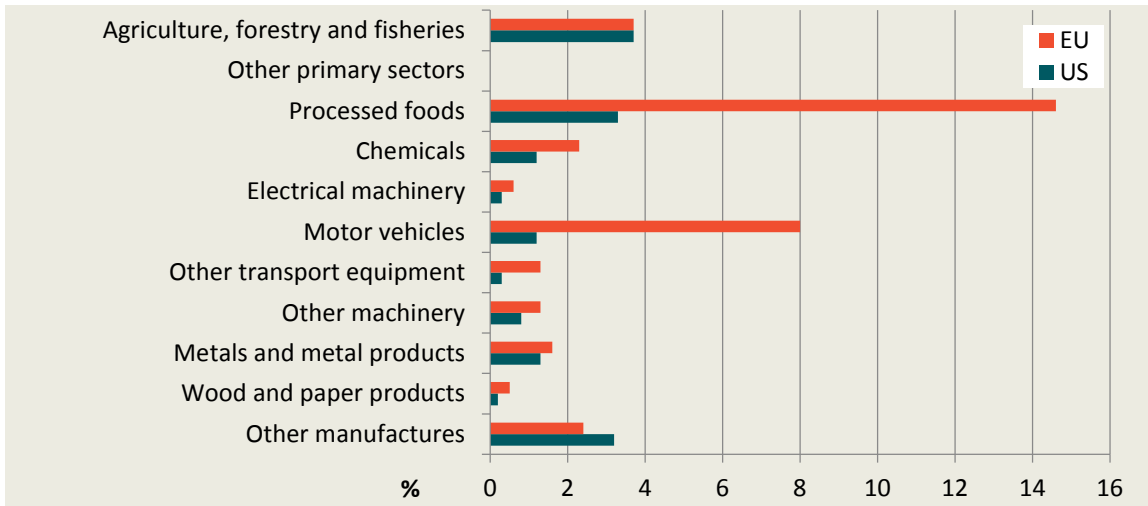
Looking at the tariffs in place in 2007, as shown by figure 4-2 below, it can be concluded that in most manufacturing sub-sectors, EU tariffs are higher than those imposed by the US. The US industry sector which is likely to benefit most from the TTIP is the automotive

¹⁶⁸ Eurostat database.

¹⁶⁹ CEPII 2013, Transatlantic Trade: Whither Partnership, Which Economic Consequences?

sector, which currently faces an 8 % EU tariff (including even higher duties for trucks and commercial vans), while EU motor vehicles and parts imported into the United States are only charged a 1.2 % duty.

Figure 4-2: Trade Weighted Applied (MFN) average tariff rates 2007

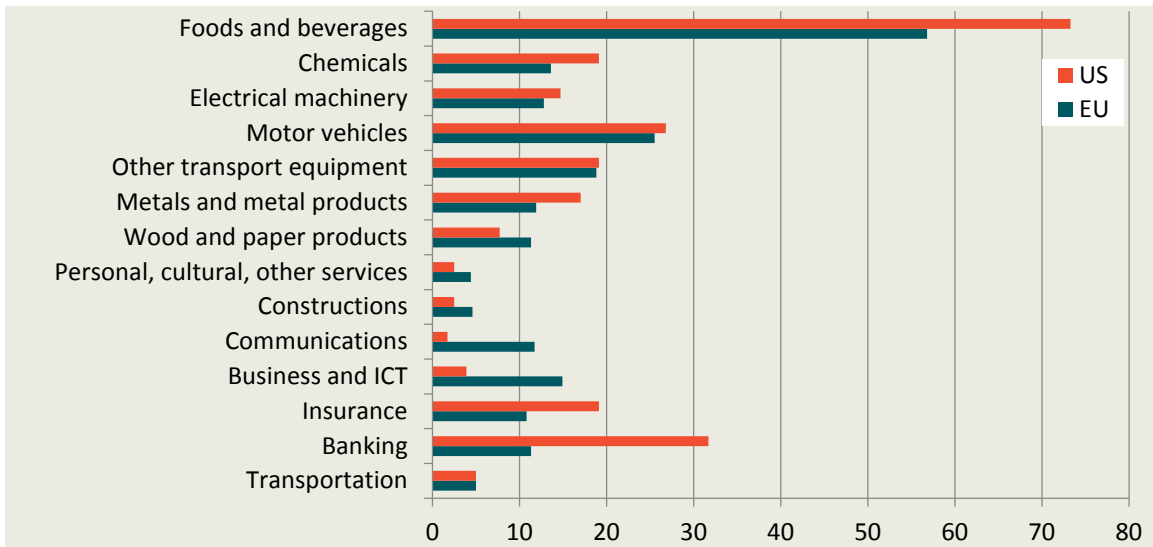


Source: Francois et al. 2013.

Non-tariff barriers

Any potential positive or negative effect of the TTIP on the manufacturing sector will greatly depend on the degree to which (non-) tariff trade barriers are adjusted and eliminated. As shown by figure 4-3 below, the highest impact could be realised in sectors such as food and beverages, chemicals and electrical machinery.

Figure 4-3: Ad valorem equivalents of NTM in the U.S. and EU¹⁷⁰



Source: Francois et al., 2013.

NTMs act as barriers in many different ways. For example, differing labelling schemes makes it necessary for companies to comply with separate standards, leading to additional marginal costs. Divergence in environmental legislation can have similar effects in form of

¹⁷⁰ Ecorys, 2009, Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis.

increased costs, or in some cases even prohibit a certain product. Local content requirements (LCR) limit the use of foreign products through prohibition or by subsidising local merchandise. This occurs for instance in the renewable industry and the agricultural sector. The harmonisation of intellectual property rights is necessary in order to facilitate investment.

In some cases, the use of NTMs can promote trade, but in many cases they restrict it. Technical barriers to trade (TBTs), sanitary and phytosanitary (SPS) measures are the most frequently encountered NTMs. According to business surveys, they are considered among the most relevant impediments to exports¹⁷¹. SPS measures affect the agricultural sector the most, accounting for 94 % of the industries total amount of NTMs. A large number of TBT concerns (29 per cent) also relate to agriculture and are the most important to trade in the agricultural sector. An ITC survey reported that the incidence of NTMs among firms in the manufacturing sector is 45 percent, while the agricultural sector encountered 63 percent¹⁷². For non-agricultural products, TBTs are the biggest NTMs encountered. After TBTs, specific limitations such as quantitative restrictions and import licensing as well as marking, labelling and packaging requirements impose substantial barriers. Administrative entry procedures are the third largest category, especially from customs formalities.

NTMs can be reduced by a free trade agreement in a variety of ways such as:

- Common product standards.
- Mutual recognition of product standards.
- Common standards or mutual recognition of testing processes.
- Improved and timelier information and transparency on regulatory change.

The approach will depend on the sector. For example, mutual recognition of product standards will be extremely unlikely in the chemical or pharmaceutical industry, whereas it is more probable for the automotive sector.

Projections

The economic impact of the implementation of the TTIP on European manufacturing sectors has been estimated by two studies (Ecorys and the Centre for Economic Policy Research (CEPR)), both carried out for the European Commission. In a study from 2009 called *Non-tariff measures in EU-US trade and investment*, Ecorys quantified sectoral non-tariff measures between the EU and the US, allowing for an estimation of possible gains from the TTIP in 2018. In *Reducing transatlantic barriers to trade and investment: an economic assessment*, the CEPR analysed the economic impact of the implementation from a less ambitious free trade agreement consisting of a ten per cent reduction in trade costs from non-tariff measures and a nearly full tariff removal (98 per cent of tariffs) and an ambitious scenario including the elimination of twenty-five per cent of non-tariff measure related cost and hundred per cent of tariffs in 2027.

¹⁷¹ WTO 2012.

¹⁷² WTO 2012.

4.2. Trade and competitiveness, overall impacts

Box 4-1: Main Drivers of competitiveness

Main drivers of competitiveness

- Access to external finance.
- Energy costs: electricity, natural gas.
- Innovation: ensure the largest possible markets; limit non-market-based competition; and ensure strong IP protection¹⁷³.
- Labour costs¹⁷⁴.

Would a new framework for raw materials and energy trade boost EU competitiveness?

The TTIP could boost competitiveness, but from an energy trade perspective limited effects are to be expected. The European manufacturing industries are large consumers of energy and remain heavily effected by price fluctuations of both natural gas and electricity¹⁷⁵. Lower prices would mean decreased marginal costs and therefore also improved competitiveness.

An increase in natural gas supply would lower energy prices, as there is more competition on the market. As described earlier in this report, this occurred during the financial crisis in 2008, when excess Qatari gas lowered prices and increased gas-on-gas competition in the European natural gas market.

As described in section 3.2 there are currently trade restrictions on both oil and gas in the US, which affects their export capacity. At the same time, the demand for fossil fuels remains high in the Asia pacific region, meaning that most available resources will be diverted to markets there.

If the time dimension of this issue is considered, it is important to note that US shale gas is currently competitive with EU pipeline gas, but there is no guarantee that this will be true in the future¹⁷⁶. Both the oil and gas industries are facing increasing CAPEX and OPEX costs, as resources become more difficult to access¹⁷⁷. The US shale gas market is no exception, and the situation is not likely to improve¹⁷⁸. In addition, the US will not become a net exporter of natural gas for another few years making it possible for the market conditions to shift, and decrease the competitiveness of US LNG. Also, the commission has supported the trans-Adriatic pipeline (TAP) which will bring Azeri gas to the EU starting from 2018, which in turn will affect European supply and prices¹⁷⁹.

In conclusion, from an energy trade perspective, the TTIP framework cannot be expected to bring additional competitiveness to the manufacturing industries. This is due to the low possibility of a substantial increase in energy trade. From this point of view, it is more

¹⁷³ <http://www2.itif.org/2013-innovation-maximizing-ttip-agreement.pdf>.

¹⁷⁴ https://www.bcgperspectives.com/content/interactive/lean_manufacturing_globalization_bcg_global_manufacturing_cost_competitiveness_index/.

¹⁷⁵ http://ec.europa.eu/energy/publications/doc/2013_pocketbook.pdf.

¹⁷⁶ Moryadee et. al. (2013) "Investigating the potential effects of U.S. LNG exports on global natural gas markets".

¹⁷⁷ Weijermars et al. (2014) "Competing and partnering for resources and profits: Strategic shifts of oil Majors during the past quarter of a century".

¹⁷⁸ Weijermars (2014) US shale gas production outlook based on well roll-out rate scenarios.

¹⁷⁹ <http://www.tap-ag.com/>.

likely to go the other way. As the US has lower energy costs it is possible that some energy intensive EU industries would be relocated to the other side of the Atlantic.

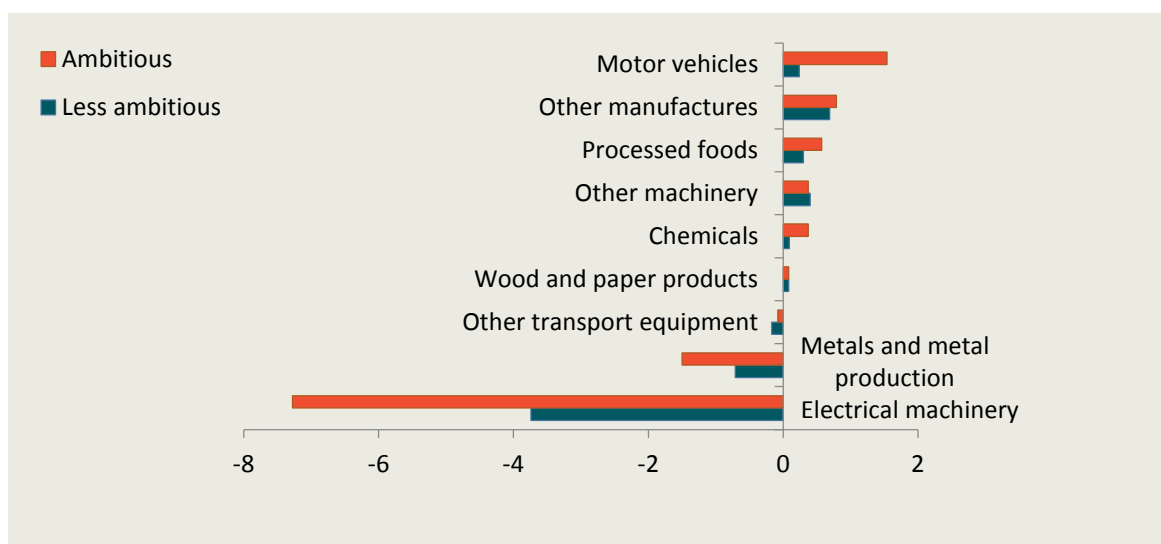
However, the TTIP could have a positive effect on European industries in other ways. Lower NTM enables the possibility of gaining larger market shares in the US. In addition, it becomes possible for these industries to obtain cheaper components from US suppliers, which helps them reduce production costs and in turn gain market shares in third countries.

Which manufacturing sectors would benefit and which ones would not?

The motor vehicle industry stands to benefit most from the agreement, followed by other manufacturers and the processed foods sector. The electrical machinery, metal and metal products sectors will decrease their output.

For most manufacturing sectors, the scope for tariff reductions to have a significant impact on trade flows is limited. Further tariff reductions lead to very small absolute changes in the level of protection. The impact is only likely to be more substantial for the processed foods and motor vehicles sectors. Besides these two sectors, NTMs are the primary factor of potential impact¹⁸⁰.

Figure 4-4: Changes in EU output (percentage) by 2027, 20 % direct spillovers¹⁸¹



Source: CEPR 2013.

The CEPR study shows that a more ambitious TTIP will affect the manufacturing industry to a larger extent in both directions (imports/exports) than the less ambitious scenario (Table 4-1). In either scenario, changes to EU output are small, with most sectors increasing output by approximately 1%. The output of motor vehicles, other manufacturers and processed foods will benefit the most from the TTIP. Electrical machinery is the only sector whose output could decrease quite substantially in an ambitious scenario. In both cases, changes in output will not have profound effects on the EU economy. It is important to point out that the above figure includes direct spillover effects (an in-direct effect). This means for example that the TTIP is also likely to simplify

¹⁸⁰ CEPR 2013.

¹⁸¹ Based on CEPR 2013, Ecorys 2009.

trade with Chinese industry which will increase their European market share. Spillovers are difficult to measure with accuracy, but are nonetheless necessary to include in the model.

The changes in output (figure 4-4) do not seem to match with the tariff rates and Non-tariff Barriers shown in figure 4-3 above. EU exports of machinery score high on the NTB index, indicating that elimination of these barriers would make it attractive to export more to the US and thus increase output. Also, the difference between US and EU tariffs on electrical machinery is very low (0.3), which does not indicate a large advantage to the US if these tariffs were eliminated. The fundamental drop of output of electrical machinery is driven by direct spillovers¹⁸². The Ecorys study reports that the decrease is actually driven by liberalisation in other sectors, which draws resources to expanding industries.

Although some sectors could expect a drop in output, all are expected to increase their exports to the US¹⁸³. The significant increase in the output of the Motor vehicles sector is due to an increase in exports, with gains of 71 % in the less ambitious scenario and nearly 149 % in the ambitious scenario. Metals and metal production show the second biggest increase in exports (42 %/68 %), despite the decreasing output (-0.7 %/-1.5 %). From this it can be concluded that although all sectors will be able to export more to the US, this does not necessarily result in increased total production.

Table 4-1: Changes in bilateral EU export to the US¹⁸⁴

Changes in bilateral exports from the EU to the US (%), 2027, 20 per cent direct spillover		
Sector	Less ambitious	Ambitious
Motor vehicles	71.0	148.7
Metals and metal production	42.4	68.2
Processed foods	26.1	45.5
Other manufactures	23.0	22.8
Chemicals	20.0	36.2
Electrical machinery	18.3	35.0
Other transport equipment	13.2	25.5
Wood and paper products	10.8	19.9
Other machinery	7.6	6.6

Source: CEPR 2013.

Will the TTIP provide a fair distribution of benefits across the Atlantic?

In a “full” liberalisation scenario, where both tariff and non-tariff measures are removed, the US gains 4.89 % in real capita income, compared to the UK (5.1 %), France (3.5 %), Germany (3.5 %). The EU member states that are already significant trading partners with the US will gain the most.

The EU consists of 28 diverse member states which all differ in population size, GDP and the extent to which they participate in transatlantic trade. As it cannot be expected that the effects from the TTIP will be evenly dispersed throughout the union, it is necessary to

¹⁸² Direct spill-overs are based on the assumption that improved regulatory conditions negotiated between the EU and the US will also result in a limited fall in related trade costs for third countries exporting to the EU and US. Centre for Economic Policy Research (CEPR), *Reducing transatlantic barriers to trade and investment: an economic assessment*, 2013.

¹⁸³ CEPR 2013.

¹⁸⁴ CEPR 2013.

conduct an analysis explaining the distribution of benefits. A study conducted by Gabriel Felbermayr (IFO) projects the economic outcomes of the TTIP under two scenarios¹⁸⁵:

- **Tariff Scenario.** In this case, trade tariffs between the US and the EU are reduced from the average of 3,5 % to 0 %. However, this is a generalisation, as tariffs differ between products. This is due to the fact that it would not have been feasible to calculate the effects of tariff removal for each product traded between the EU and the US.
- **Comprehensive liberalisation scenario.** This scenario econometrically measures the trade benefits from other FTAs. It encompasses the removal of non-tariff barriers such as recognition of mutual standards or market harmonisation.

The TTIP will affect global trade flows, meaning that increases in trade between the US and the EU will result in decreasing trade with other countries, as the FTA gives competitive advantages. In addition, the agreement might lead to a decrease in trade within the EU itself. It is therefore necessary take a holistic approach and look at the total change in real capita income (%) in the EU under the tariff removal scenario, as shown by table 4-2 below. France, a country which is not highly involved in trade with the US, capitalises less than the average member state in this scenario. The opposite applies for United Kingdom, a major trade partner with the US. Smaller countries which are more involved in the international division generally benefit more from lower trade costs.

In a comprehensive liberalisation scenario, the European average is 3.94 % with some clear beneficiaries. Sweden, Finland, UK, Ireland and Spain all gain significant benefits from the removal of non-tariff trade barriers, while France, Germany, Austria and Czech Republic are all below the mean average.

Table 4-2¹⁸⁶: Changes in real capita income (%) in the EU, US and Selected Countries. Tariff scenario and Comprehensive liberalisation scenario

Country	Comp. liberalisation	Tariffs only	Country	Comp. liberalisation	Tariffs only
Austria	2.83	0.22	United States	4.89	0.41
Belgium	2.25	0.17	Australia	-2.01	-0.17
Bulgaria	3.94	0.33	Brazil	-0.77	-0.05
Croatia	3.53	0.38	Canada	-3.09	-0.27
Cyprus	4.36	0.37	China	-0.50	-0.04
Czech Republic	3.04	0.24	India	-0.31	-0.03
Denmark	3.45	0.28	Japan	-0.51	-0.05
Estonia	4.31	0.36	Mexico	-2.56	-0.22
Finland	4.60	0.39	Norway	-1.91	-0.17
France	3.46	0.28	Russian Fed.	-1.01	-0.08
Germany	3.48	0.28	South Africa	-1.69	-0.14
Greece	4.21	0.35	Turkey	-1.56	-0.14
Hungary	3.50	0.28	Non-TTIP average	-0.92	-0.08
Ireland	4.70	0.39	World average	1.58	0.13

¹⁸⁵ Felbermayr et al. (2014) Macroeconomic potentials of transatlantic free trade: A high resolution perspective for Europe and the world.

¹⁸⁶ Felbermayr et al. (2014) Macroeconomic potentials of transatlantic free trade: A high resolution perspective for Europe and the world.

Country	Comp. liberalisation	Tariffs only	Country	Comp. liberalisation	Tariffs only
Italy	3.86	0.32			
Latvia	4.10	0.34			
Lithuania	3.97	0.33			
Luxembourg	2.57	0.20			
Malta	4.84	0.41			
Netherlands	2.85	0.22			
Poland	3.51	0.28			
Portugal	4.80	0.40			
Romania	3.87	n.a.			
Slovak Rep.	3.40	0.27			
Slovenia	3.14	0.25			
Spain	5.56	0.48			
Sweden	4.25	0.35			
United Kingdom	5.14	0.44			
Eu average	3.94	0.32			

Source: Felbermayr et. al 2014.

Change is more significant for the US than the EU. In the “tariff scenario”, it gains an average of 0.41 % change in real capita income, as shown by table 4-2 above. In the “comprehensive liberalisation scenario” the benefits are even more significant, with a substantial increase of 4.89 %. This comes at the expense of current major trading partners to the US, namely Canada, Mexico, Japan and Australia. These countries are therefore working to strengthen, or create new bilateral agreements with the US, as indicated by the negotiation of the Trans Pacific Partnership (TPP).

4.3. Impacts on specific sectors

What could the implications be for the EU energy intensive industries?

The metal industry will be negatively affected by the TTIP, as output is displaced by US imports. The chemical sector is projected to increase its total output in Europe, but this is an uncertain prediction as an increased divergence in the price for natural gas between the EU and the US would have a negative effect on European industries. The cement and paper/pulp industries are likely to experience a very limited impact.

The major energy intensive industries in the EU are¹⁸⁷:

- Metals (Iron, Aluminium).
- Cement.
- Chemicals.
- Paper, pulp.

¹⁸⁷ http://ec.europa.eu/enterprise/policies/sustainable_business/climate_change/energy_intensive_industries/carbon-leakage/files/cl_literature_review_en.pdf.

EU energy intensive industries would benefit from cheaper energy costs. However, from an energy trade perspective the implications for this sector can be expected to be similar to those discussed in chapter 4.2. A substantial increase of oil and gas imports from the US is unlikely to occur as a result of the TTIP, and therefore energy costs are likely to remain the same.

Metals

The EU is the world's second largest metal product producer after China¹⁸⁸. Bilateral trade is expected to increase as a result of the TTIP, but EU final output will decrease by - **0.71 % or -1.5 %**, in a less ambitious and ambitious scenario respectively¹⁸⁹.

The European Metals Association Eurometaux has highlighted the importance of the chapter on energy in the TTIP. This is crucial for many metal producers where energy expenses accounts for as much as 60 % of total costs of production¹⁹⁰. As previously mentioned in this report, US companies have remained competitive due to the exploitation of cheap domestic shale gas. Eurometaux claims that without a level playing field in terms of energy costs, the TTIP will be harmful for European metal industries.

In general, the trade in metal products between the EU and the US is not directly in conflict with differing environmental or social and legislation, and therefore the total NTMs do not bring substantial additional costs for exporters (in comparison with other industries).

However, there is divergence in regulation regarding pressure equipment, which is a barrier for European exporters. In addition, due to the weight of metal products, transportation costs are high, and large shares of metal product trading takes place through Foreign Direct Investment. These types of investments are hindered by the Foreign Investment and National security act, which in certain cases requires security clearance from the President. Trade in metal products is also limited by local content requirement such as the Buy American act¹⁹¹.

Cement

The most common form of cement is called "Portland cement", and is traded in rather small amounts between the EU and the US¹⁹². Due to logistical reasons, Canada is the main supplier of this product to the US. The impact of the TTIP on the cement industry is not listed in the economic impact assessments available, but modest effects can be expected due to high transport costs and that fact that only 3 % of global production is traded across borders¹⁹³.

Chemicals

The trade in chemicals between the EU and the US is faced with significant NTMs on both sides. Depending on the outcome of the negotiation, the TTIP is likely to have a positive effect on the final output of EU's chemical industry, increasing by **0.09 %** in a less ambitious scenario, and by **0.37 %** in an ambitious scenario.

¹⁸⁸ Ecorys (2009) Non-tariff measures in EU-US Trade and Investment.

¹⁸⁹ Centre for Economic Policy Research (CEPR) (2013) *Reducing transatlantic barriers to trade and investment: an economic assessment*.

¹⁹⁰ Personal communication with Elena Vyboldina - European Association of Metals (Eurometaux).

¹⁹¹ Ecorys (2009) Non-Tariff Measures in EU-US Trade and Investment – An Economic Analysis.

¹⁹² Eurostat (2013) EU trade by SITC since 1988.

¹⁹³ <http://www.economist.com/news/business/21579844-worlds-cement-giants-look-set-recoverybut-will-it-be-durable-ready-mixed-fortunes>.

In a position paper on chemicals, the Commission voiced concern regarding the differences in legislation in the US and the EU. The barrier of greatest concern is that the fundamental principles of the EU Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulation and the Toxic Substance Control Act (TSCA), are simply too different¹⁹⁴. Unlike the TSCA, REACH places the burden of proof on manufacturers, who must demonstrate that their chemicals can be used safely. A proposal to amend the TSCA has been introduced to the US Congress, but the European Commission claims that the draft reform fails to create coherence with the fundamental requirements under the REACH directive. Environmental NGOs are afraid that effective REACH legislation will have to fall back on the lower common denominator, the TSCA¹⁹⁵. US Chemical industry groups have criticised REACH, claiming it is a significant barrier to trade¹⁹⁶. This NTM will likely be difficult to harmonise between the EU and the US, making the less ambitious scenario outlined above more probable. The European Chemical Industry Council (Cefic) agrees with the dissimilarities between the TSA and REACH and claims that mutual recognition or harmonisation is not really an option. Rather, they stress that the removal of normal tariffs will bring real cost savings in transatlantic trade. However, Cefic has called for a “transition” period for some tariffs which are particularly important for the energy intensive sectors such as petrochemicals. This segment of the industry is not as competitive as their US counterparts, both with regard to feedstock and energy costs. Cefic also stresses the importance of rules of origin, which need to be addressed in order to utilise the full potential of tariff removal¹⁹⁷.

The European Federation of Pharmaceutical Industries and Associations (Efpia) welcome the agreement, with their position being that the industry needs competition to thrive and that increased market access in combination with strong IP protection has the potential to boost innovation and competitiveness. The association claims that there seems to be a political will and an opportunity to minimise excessive administrative burdens through the TTIP. For example, they see potential in finding mutual recognition of Good Manufacturing Practices (GMP) inspections, as has been seen in previous third party agreements. Like many other industry groups, Efpia renounces any claim of potentially lowering standards. They claim it would not be in the interest of US/EU regulators, or the pharmaceutical industry¹⁹⁸.

The European Environmental Bureau (EEB) claims that even if the Commission has promised not to lower environmental standards, there is still potential to slow down the implementation process of amending policies.

Paper and pulp

Both tariff and NTMs are extremely low on both sides of the Atlantic and Product Market

Regulation (PMR) indexes are a mere 0.10 for US exports and 0.08 for EU. The industry has hover been challenged by energy and climate change policies¹⁹⁹. Projected scenarios indicate that the output of the EU paper and pulp industries will only increase by 0.08 %²⁰⁰. This is due to the fact that trade in paper and pulp is more regionally

¹⁹⁴ http://trade.ec.europa.eu/doclib/docs/2014/may/tradoc_152468.pdf.

¹⁹⁵ <http://www.foe.org/news/archives/2013-06-sinister-partners-transatlantic-trade-agreement--tox>.

¹⁹⁶ http://www.koganlawgroup.com/uploads/CW53_December12_Kogan.pdf.

¹⁹⁷ Personal communication with Rene van Sloten, Cefic. 23-10-2014.

¹⁹⁸ Personal communication with Gabriella AlMBERG and Maria Trallero, Efpia. 23-10-2014.

¹⁹⁹ Ecorys (2009) Non tariff measures in EU-US Trade and Investment.

²⁰⁰ Centre for Economic Policy Research (CEPR) (2013) Reducing transatlantic barriers to trade and investment: an economic assessment.

concentrated, much like the cement industry. NTMs in this sector comprise of import declarations of wildlife and wild plants in the US and divergence in certification schemes. This creates additional costs and delays for importers.

What could be the implications for SMEs?

Export-oriented SMEs could benefit a lot from trade liberalisation, because NTMs make up a relatively high share of their costs which limits or even prohibits market entry and transatlantic trade. SMEs that are not export-oriented may face higher competition if American companies enter their domestic market.

Non-tariff measures can be especially cumbersome for SMEs and restrain them from market entry and transatlantic trade. A survey amongst leading German trade associations showed that a reduction in NTMs appears to be especially useful for SMEs, while the benefits of simply eliminating tariffs accrue to larger firms. SMEs also see more opportunities for growth than large companies if trade barriers would be reduced, especially in the chemical and agricultural sectors²⁰¹. However, SMEs that are not export-oriented may experience a drop in competitiveness once more efficient American companies enter the market.

Food products and beverages are sectors with relatively high tariff rates and NTMs, and are also industries with a relatively large share of SMEs (52 % and 36 % respectively). Regulatory harmonisation and decreased barriers could be of particular help to the SMEs in these subsectors. However, with respect to GMOs, regulations and views on risk, health and safety standards are not likely to converge in the near future²⁰².

Implications for the manufacturing sector

In the EU manufacturing sector, 45 % of total value added consists of SMEs, which is a large share when compared to the energy sector, but smaller than most other economic sectors²⁰³. The amount of SMEs in the manufacturing subsectors varies from less than 10 % in the tobacco industry to over 80 % in the printing sector. The amount of large enterprises in the computer sector is confidential; hence the share of SMEs is unknown.

Since production and manufacturing of raw materials creates economies of scale, SMEs are more active further along the value chain in roles such as distribution and services, however they are also active in niche markets for specialised products and innovation. For example, the aerospace and automotive industries are dominated by large enterprises, but SMEs do exist in the parts and accessories subsectors. It should also be mentioned that the distinction between large and medium and small enterprises is only useful to a limited extent. The point is that many small firms sell to larger ones which may export to the US. This means that through input-output linkages the gains in market share for larger firms also help smaller ones²⁰⁴.

4.4. Internal market and administrative burden impacts

What would the consequences be for EU public interventions such as state aid?

The EU has very strict regulation on state aid in place, whereas the US is only governed by WTO treaties. However, this does not seem to be problematic, given

²⁰¹ Felbermayr and Larch 2013, The Transatlantic Trade and Investment Partnership (TTIP): Potentials, Problems and Perspectives, CESifo Forum 2/2013 (June).

²⁰² Ecorys 2009.

²⁰³ Eurostat, 2011 figures.

²⁰⁴ Ecorys 2009.

that the total output of state aid expenditure from the US and the EU is very similar, EUR 63 billion and EUR 67 billion respectively.

EU regulation

In order to ensure fair competition in the internal market, EU competition policy has strict rules on state aid, whereas there are no provisions in US legislation²⁰⁵.

Since 2009, Articles 101-109 of the Treaty on the Functioning of the European Union (TFEU) form the legal basis of EU competition law. Article 107 prohibits state aid that distorts competition in the internal market. Member States must notify the EC of planned state aid measures *ex ante*, unless they fall under a general exemption. The EC has the sole authority to decide on the legality of state aid²⁰⁶. In 2012, the EC initiated a comprehensive State Aid Modernisation (SAM) programme, with the aim of better focusing state aid on targeting market failures and on objectives of common European interest, as well as streamlining and accelerating procedures. On May 21 2014, the Commission adopted the SAM reform package. It includes new rules for state aid for research, development and innovation to support the EU's Europe 2020 strategy²⁰⁷.

US – regulation

In contrast to the EU, US competition law has no rules on state aid. However, in several cases US courts have ruled against aid by local authorities or US states on the grounds that it discriminates against interstate commerce²⁰⁸. The only legislation that covers EU-US trade is the World Trade Organisation (WTO) agreement on subsidies and countervailing mechanisms. Under this agreement a subsidy can be considered as a *prohibited* subsidy or an *actionable* subsidy. Export subsidies and import-substitution subsidies are prohibited *per se* under WTO law. All other subsidies are actionable, meaning that a country can: i) impose countervailing duties, or ii) challenge them before the dispute settlement body. In both cases it has to prove that the subsidy causes harm to the country's domestic industry.

The available literature about the United States, shows that states seem to engage in significant and costly competition to shift activities from neighbouring states to themselves, often without creating new activities. Recently, this cross-state competition seems to have intensified, which has prompted some American authors to recommend federal control over state aid²⁰⁹.

EU and US state aid expenditures: is there a big disadvantage?

Despite the downward trend in the amount of state aids and subsidies granted by governments, they still account for a significant share of the world economy and could therefore affect competitiveness of EU and US industries. In the EU, where control is the most strict, state aids still represent between 0.51 %-0.79 % of EU GDP excluding crisis-related measures, coming down to EUR 67 billion in 2012^{210,211,212}. In the context of the

²⁰⁵ EPRS 2014 EU and US competition policies.

²⁰⁶ EPRS 2014 EU and US competition policies.

²⁰⁷ http://ec.europa.eu/competition/publications/cpb/2014/005_en.pdf.

²⁰⁸ EPRS 2014 EU and US competition policies.

²⁰⁹ OECD 2010.

²¹⁰ http://ec.europa.eu/competition/state_aid/scoreboard/non_crisis_en.html.

²¹¹ OECD 2010.

²¹² EPRS 2014 EU and US competition policies.

financial crisis, the Commission took more than 40 decisions between October 2008 and October 2013 authorising state aid to the financial sector.

The New York Times put together a database and found that US local governments (cities, counties and states) spend *at least* EUR 63 billion in business incentives each year, i.e. 0.51 % of US GDP in 2012²¹³. It is important to keep in mind that this is rough estimate, but it still gives an indication of the scale of government subsidies in the US.

Even though legislation on state aid is stricter in the EU than in the US, this does not seem to have an adverse effect on the total state aid output. It is important to note that the total amount of state aid is difficult to measure. An illustration of this difficulty can be seen in the Airbus-Boeing dispute concerning the EU and the US. It is one of the lengthiest dispute cases and has gone on for over 8 years without any resolution. The US is accusing EU member states of giving subsidies to Airbus-related companies. The EU has pushed back, claiming that the issue is even more evident in the case of US subsidies to Boeing²¹⁴.

Table 4-3: State aid in the US per sector (annually, Euro million)^{215,216}

Sector	State aid*
Manufacturing	20224
Agriculture	6493.8
Oil, gas and mining	1975
Film	1192.9
Technology	672.29
Electricity	496.12
Aircraft	372.09
Print media	218.04
Defence	203.82
Alternative energy	185.65

Source: The New York Times.

Sectors that receive EU state aid may be less affected by a TTIP than sectors that are excluded from EU state aid. State aid comprises expenditure by EU member states which has either been earmarked for horizontal objectives of common interest or is aid granted to dedicated sectors of the economy, e.g. agriculture, fisheries, coal, transport, or serving a specific objective, e.g. rescue and restructuring, closure aid²¹⁷. Most manufacturing sectors do not fall within these sectors, and therefore may be disadvantaged if the differences between EU and US legislation on state aid remain in place.

To what extent would elimination of tariffs reduce administrative burdens for import and exports?

²¹³ <http://www.nytimes.com/interactive/2012/12/01/us/government-incentives.html>.

²¹⁴ <http://www.asil.org/insights/volume/16/issue/17/airbus%E2%80%94boeing-subsidy-dispute-both-parties-violation-there-end-sight>.

²¹⁵ Database New York Times, <http://www.nytimes.com/interactive/2012/12/01/us/government-incentives.html>.

²¹⁶ Using exchange rate of 26-09-2014 (www.valuta.se) 1 USD = 0.79 EURO.

²¹⁷ http://ec.europa.eu/competition/state_aid/overview/index_en.html.

Elimination of tariffs would not reduce administrative burdens as the TTIP is likely to require “proof of origin” for products, a process which can be cumbersome for some manufacturers²¹⁸. Some exporters might not be willing to accept a 3 % tariff reduction in exchange for this increase in administrative burden. Therefore, a more comprehensive agreement is necessary for EU industries.

Changes in administrative burden²¹⁹

Even if tariffs are low, they represent an international “tax” to intra-firm trade between foreign affiliates and require administrative effort and hence costs to manage. Several studies have shown that such administrative trade costs can be up to four or five percent of the value of trade²²⁰. However, the TTIP is likely to require “proof of origin” in exchange for the elimination of tariffs, which in itself is an administrative burden. We draw this conclusion based on other FTAs such the CETA agreement²²¹. Some exporters might be reluctant to accept the restricted benefits of tariff removal, in exchange for the additional administrative burdens. Therefore, it is crucial that the TTIP becomes a comprehensive agreement focused towards NTMs, where the gains are much more substantial, which would be able to compensate for the need to submit proof of origin.

4.5. Jobs and labour market impacts

This section begins by providing an analysis on the effects of the TTIP on what is normally defined as the European social model. This is followed by an assessment of the impacts for high skilled workers. Finally, the question if the agreement will lead to a brain-drain or a brain-gain is answered. These terms can be described as the large scale immigration/migration of high skill workers to a country with better pay and working conditions.

Will EU jobs and the EU model of social welfare be under jeopardy?

Considering that provisions on labour standards are not likely to be included in the TTIP, the model of social welfare is not likely to be affected. Furthermore, labour standards are not likely to decrease as a result of increasing competition from US industries due to the fact that most European companies are competitive due to factors other than the labour costs.

The question can be approached from two perspectives. Firstly, an assessment is made of the direct effects of the TTIP on EU labour laws with discussion of whether any labour provisions will be included in the agreement. Secondly, an analysis of the in-direct effects of TTIP, and how increased competition between the EU and the US could affect the social model is carried out.

The European Commission has stated in its TTIP position paper regarding Trade and Sustainable Development that *“trade is mutually supporting environmental protection and social development, and does not come at the expense of the environment or of labour rights”*²²². The paper also claims the negotiations should have previous International

²¹⁸ <http://www.ustr.gov/about-us/press-office/press-releases/2014/March/US-Objectives-US-Benefits-In-the-TTIP-a-Detailed-View>.

²¹⁹ Administrative burden (or administrative costs) can be defined as the costs incurred by enterprises, public authorities and citizens in meeting legal obligations to provide information on their action or production, either to public authorities or to private parties. COM 2013(136).

²²⁰ ECIPE 2010, A Transatlantic Zero Agreement.

²²¹ <http://www.tagesschau.de/wirtschaft/ceta-dokument-101.pdf>.

²²² <http://www.iatp.org/files/TPC-TTIP-non-Papers-for-1st-Round-Negotiations-June20-2013.pdf>.

Labour Organisation (ILO) agreements that have been ratified by both parties as their starting point. These include the ILO 1998 Declaration on Fundamental Rights and Principles at Work and the 2008 ILO Declaration on Social Justice for a Fair Globalization. The US has chosen not to ratify ILO labour standards such as the act on child and forced labour. However, this does not mean that the US is in violation of international labour laws since neither of these factors are an issue in the US²²³.

The European social model can be defined by a set of principles including²²⁴:

- Fundamental social rights, including freedom of association, the right to strike, protection against unjustified dismissal, fair working conditions, equality and non-discrimination.
- Social protection and wealth redistribution measures. Social dialogue, with the right to conclude collective agreements.
- Social and employment regulation.
- State responsibility for economic and social cohesion.

Labour rights and FTAs. The EU has implemented labour laws at both union and member state level. This is similar to US legislation, which is implemented at both federal and state level²²⁵. As it cannot be considered feasible to provide an analysis on all EU and US states different legislation, the following section describes the general dissimilarities between the two continents;

- Employment contract. In the US, there is no requirement for a working contract, and most employment is done on an at-will basis, meaning that both parties have the right to terminate the relationship at any time. This is specified in the EU, by Council Directive 91/533/EEC, which requires employers to supply a written contract on the conditions of employment²²⁶.
- Wrongful termination. In the US, an employer can terminate the employment for any reason other than discrimination, retaliation, defamation, breach of explicit contract or fraud. However, just because an employee feels he has been treated unfairly, he might not be able to claim wrongful dismissal. This is not the case under European labour law, which gives the right to claim wrongful dismissal in the case of breach of contract.
- Working hours. Federal employment laws in the US do not place any limitations on working hours for employees. This is regulated in Europe at Member State level, with minimum EU level requirements.

These dissimilarities affect the US by providing them with cheaper labour costs, but it is not likely that the EU will need to lower its standards because of the TTIP. There are precedents from other FTAs, such as the 1994 North American Free Trade Agreement (NAFTA) that justify this conclusion. The NAFTA deal did not in itself include any provisions on labour rights²²⁷. Instead, another contract was signed - the North American Agreement on Labour Cooperation (NAALC), which included 11 working right principles, such as

²²³ <http://www.leeswepston.net/Cornell.htm>.

²²⁴ <http://www.etuc.org/european-social-model>.

²²⁵ <http://www.law.cornell.edu/wex/labor>.

²²⁶ <http://www.eurofound.europa.eu/areas/industrialrelations/dictionary/definitions/contractofemployment.htm>.

²²⁷ <http://fpc.state.gov/documents/organization/6211.pdf>.

minimum wages, child labour, and occupational safety and health. However, this agreement was implemented at the national level²²⁸, meaning that even if the US has lower protection in terms of working rights, there is no need to believe that the EU would need to adopt any legislation.

The EU – Canada trade agreement (CETA) (which is currently being negotiated) is likely to include labour provisions. The main purpose of this is to increase labour mobility between the countries. It is likely to strive to harmonise definitions and terminology, in an effort to address challenges such as finding reliable information about visa and work permit requirements, long processing times, double taxation and concerns with spousal visas²²⁹.

Labour rights and competitiveness

NGOs have voiced concerns regarding the TTIP and labour rights, claiming it will be necessary for the EU Member States to lower their standards to US levels or become less competitive²³⁰. In theory, this would mean that since the US has more competitive industries, their domestic production would displace the market share of European industries. But is this claim substantiated? The reports that have modelled the outcomes of the TTIP for different industry sectors have projected a decrease in output from the metal, metal products and for electrical machinery²³¹. This will lead to fewer jobs in these sectors, while the total output from EU industries increases. Given the current significant protection for labour in the EU as described above, standards are not likely to be lower, even under conditions of increased competition.

The US has lower labour expenses due to low minimum wages and lower cost of living^{232,233}. In turn, the increasing supply of cheap natural gas has led to decreasing energy costs. These are conditions that the EU has difficulty competing with, yet the member states have remained competitive compared to the US, resulting in a trade surplus. So if the US is more competitive, why are more EU industries not negatively affected by the TTIP?

Figure 4-5 below shows the cost-competitiveness of manufacturing industries in the world's top exporting countries. The index shows no signs of correlation between the amounts of exports compared to the average cost structure of the respective country. This is because there are drivers exogenous to this model that contribute to the EU's competitiveness. Of course, electricity and gas prices are influencing factors, but they are partly offset in the EU by improvements in energy efficiency. A study done by the European Commission claims that the EU has remained competitive due to highly skilled workers, high domestic content of export goods, and comparative advantages linked to complex and high-quality products. The EU has an advantageous position as its industries bring high added value to their products, compared to US, Chinese and South Korean exported goods that rely more on foreign intermediate goods and services. Furthermore, innovation remains an important driver in competitiveness²³⁴.

²²⁸ Ibid.

²²⁹ The conference board of Canada (2014) Across the sea with CETA: What New Labour Mobility Might Mean for Canadian Business.

²³⁰ http://corporateeurope.org/sites/default/files/attachments/brave_new_transatlantic_partnership.pdf.

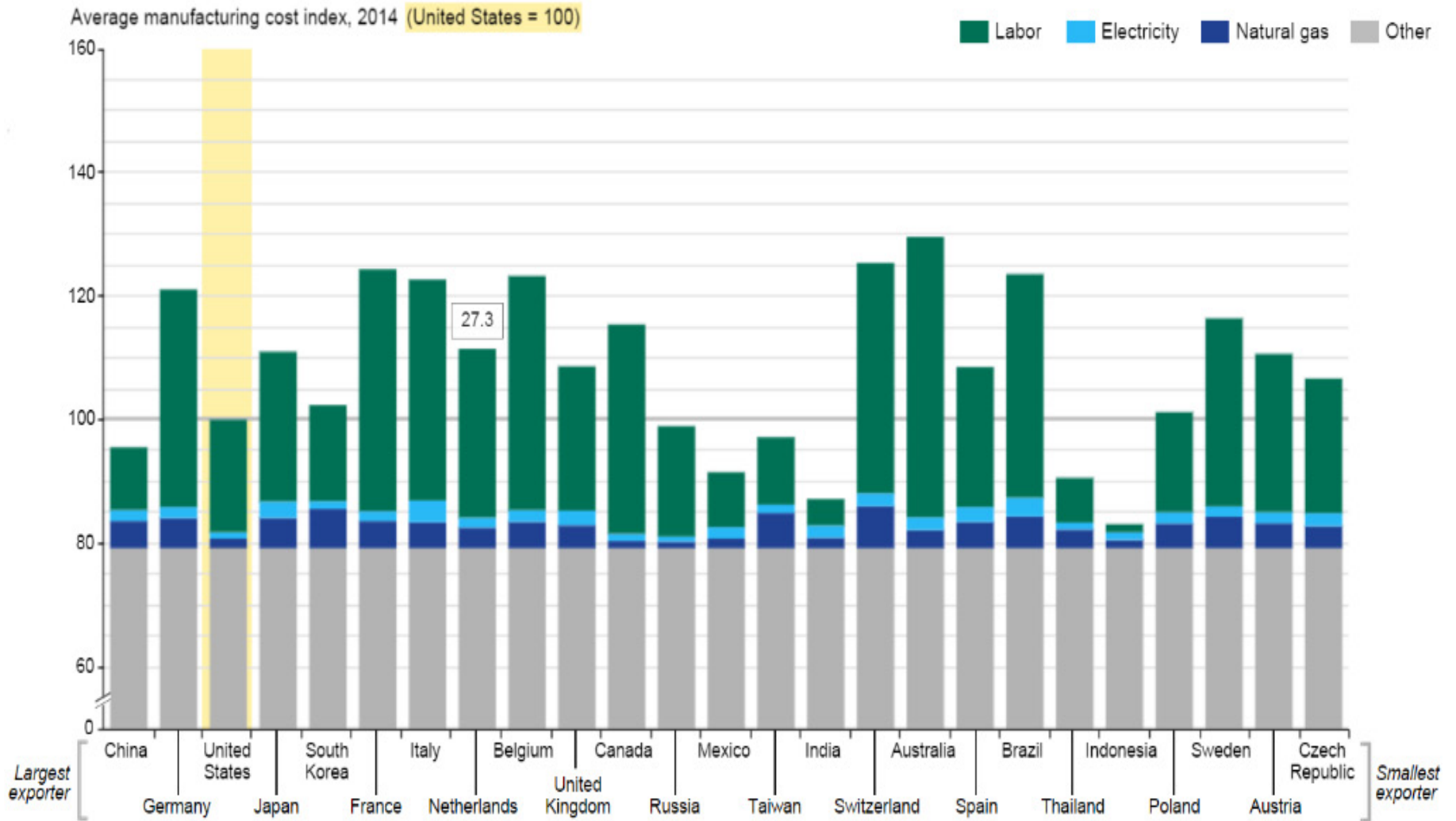
²³¹ European Commission (2013), 'Transatlantic trade and investment partnership: the economic analysis explained', Centre for Economic Policy Research, London.

²³² http://www.numbeo.com/cost-of-living/rankings_by_country.jsp.

²³³ [http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/File:Minimum_wages_January_2014_\(1\)_EUR_per_month_YB14_II.png](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/File:Minimum_wages_January_2014_(1)_EUR_per_month_YB14_II.png).

²³⁴ http://europa.eu/rapid/press-release_MEMO-14-527_en.htm.

Figure 4-5: Global Manufacturing Cost-Competitiveness Index 2014



Source: The Boston Consulting Group.

What could the implications be for high-tech and skilled workers?

The impact of TTIP on high-tech and skilled workers will vary according to the size and skill-intensity (low/medium/ high) of the manufacturing subsector (ranging from slight positive impact in the chemicals and other machinery sector to a moderate negative impact in for example the electrical machinery sector), however, the overall impact is expected to be small. Apart from the projections used for this report, it is important to consider the possibility of the TTIP increasing wages for all parts of the workforce, as exporting firms (normally) pay more than firms who only operate within one country.

Definitions and framework

High-tech and skilled workers are defined as the work force with a high skill level (and a high educational level) that creates significant economic value and has high expertise levels and high wages. The work usually involves STEM skills, i.e. science, technology, engineering and mathematics. To place it in context, according to Eurostat, approximately 25 % of the EU population in 2013 had received tertiary education (which can be roughly equated to high-skilled workers)²³⁵.

The size of the implications on this category of workers will depend on which and to what extent manufacturing (sub-) sectors will be affected in terms of jobs created, lost or preserved and to what extent these affected sub-sectors employ high-tech and skilled workers. TTIP will have an impact on the productivity of various manufacturing sectors and their production through the removal of trade barriers, and this will result in loss or gain in employment. This will in turn affect which skills will benefit or lose from the removal of trade barriers by TTIP.

Evidence from the literature

Secondary literature provides some evidence on how the high-tech/ skilled workers will be affected by the TTIP. For example, the aforementioned European Commission's study on 'Transatlantic trade and investment partnership' (2013) done by CEPR²³⁶ finds that:

- Wages for both skilled and less skilled workers are likely to rise by around 0.5 % due to the TTIP agreement.
- The overall movement of workers between sectors due to the TTIP is less than 0.7 % in the EU, hence there are unlikely to be significant shifts of high-tech/ skilled workers across different economic sectors.

A study by Bertelsmann Stiftung (2013) on 'Transatlantic trade and investment partnership'²³⁷ also analyses what happens in the labour markets. The results of modelling their two scenarios, tariff and deep liberalisation scenario, show that the positive effects on employment of deep liberalisation are many times greater. In Europe, the UK will benefit the most from the TTIP due to their close ties (including language) with the US. However, the study does not distinguish these effects into effects on high vs low skilled workforce.

²³⁵ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=edat_ifse_07&lang=en.

²³⁶ European Commission (2013), 'Transatlantic trade and investment partnership: the economic analysis explained', Centre for Economic Policy Research, London.

²³⁷ Felbermayr, Heid and Lehwald (2013), 'Transatlantic trade and investment partnership (TTIP): who benefits from a free trade deal?', Bertelsmann Stiftung/ Global Economic Dynamics, Germany.

An ongoing study by Ecorys (2014)²³⁸ also shows that the majority of workers affected by TTIP come from manufacturing sub-sectors that are important for low skilled workers in the EU, e.g. processed foods and metals. Other sectors such as machinery and chemicals employ relatively more high skilled workers.

A study by Daniel Baumgarten (2012) shows that exporting firms pay higher wages than non-exporting firms, even after accounting for the fact, that they employ workers with better education and longer experience. This exporter wage premium can be quite important. It has been estimated to be about 10 %-16 % in Germany. It also shows that other countries have similar wage premia. This means, that moving more firms into exporting status could potentially benefit all workers, since exporters pay those premia regardless of the educational level²³⁹.

Box 4-2: Case of Germany

A study by Bertelsmann Stiftung (2013)²⁴⁰ on the effects of TTIP in Germany concludes that the manufacturing sector, in particular the electronics industry and metal processing in Germany will benefit from newly created jobs. This is due to the fact that the effects on employment are mainly seen in subsectors where value creation and exports are quite high – hence metal production, the electronics industry and motor vehicle and machine construction. The results with respect to the electronics machinery and metals production are in contrast to the CEPR study assessed above. However, the differences might be due to the different scope (EU vs Germany) and the different methodologies and classifications used (e.g. electronics industry does not correspond to electronic machinery).

The study also shows that new jobs will be created for all skills levels and the real income of the unskilled/ low skilled workforce could increase even more than that of highly qualified workers. Hence, the high tech/ skilled work force is expected to be less affected than the low skilled work force. This is due to the fact that many manufacturing subsectors that would benefit from TTIP (high export) involve a low skilled workforce, e.g. metals production or food processing.

However, taking the manufacturing sector as a whole, relatively more jobs would be created for highly skilled people since the sub-sectors that create high value (electronics, motor vehicle) employ high skilled people. The study estimates that around 12.5 % of newly created jobs in Germany would be for highly skilled people, 14.2 % for low skilled and 73.3 % for medium level skill (this is not surprising as medium level skilled people form the largest share of the population, around 50 % according to Eurostat).

Overall, it can be seen that there are ongoing studies assessing the impact of the TTIP on employment and skills in Europe and its Member States. The initial research shows that the TTIP will have a largely positive impact on employment, including on high-tech/ skilled workers in the manufacturing sector in the EU, however, this impact will be very small.

²³⁸ Ecorys (2014), 'Trade sustainability Impact Assessment on the TTIP between the EU and the USA', Final inception report for DG TRADE, EC available at http://trade.ec.europa.eu/doclib/docs/2014/may/tradoc_152512.pdf.

²³⁹ Baumgarten (2012) Exporters and the rise in wage inequality: Evidence from German linked employer-employee data.

²⁴⁰ Felbermayr, Schoof and Ronge (2013), 'Federal states, industries and education level – effects of TTIP in Germany', Policy Brief #2013/05.

This is due to the fact that many manufacturing subsectors could be classified as medium or low skill intensity sectors and as such employ largely medium or low skilled people. However, in the electronics industry, chemicals or other machinery where high-skilled people are relatively more employed compared to e.g. food processing, the impacts of the TTIP could be more significant but still very small. The electrical machinery sub-sector is likely to see a moderate contraction of output, according to the CEPR (2013) estimates, which might have a negative impact on the high-skilled workforce. It is important to note that the negative projections for the electrical machinery sector depend on the assumption of spillovers in the CEPR report which brings many uncertainties to the projection.

Should we foresee a brain-drain or a brain-gain?

The analysis of the implications of TTIP for high-skilled workers (in the previous section) and the evidence gathered on the impact of other (free) trade agreements on labour mobility of skilled workers point to the fact that no significant brain-drain or brain-gain is foreseen due to TTIP in Europe. Rather, it is likely that we see a brain-exchange, as it become easier for larger multinationals to relocate their personnel. However, there is a potential risk of relocating R&D departments due to the beneficial conditions for innovation in the US. The effects are likely to be small in terms of jobs, but might have larger implications for value added.

Definitions and framework

A brain-drain or a brain-gain refers to the emigration/ immigration, respectively, of intelligent, well-educated individuals to another country for better working conditions (benefits, income) or jobs leaving the country of origin with less (or more) skilled people. A brain-drain/ brain-gain can be geographical (between the US-EU, from outside US to EU and vice-versa, intra-EU) and sectoral (between different sectors).

The framework of analysis of a brain-drain or a brain-gain can be taken from other examples similar to TTIP where trade barriers have been removed between countries, such as for example the enlargement of the EU. The analytical framework includes aspects such as²⁴¹:

- Migration trends – volumes, typology of migrants, destinations and directions, duration.
- The highly-skilled – in which sectors, countries, volumes.
- The legal framework – migration laws and policies, including visa requirements, work permits, etc.
- Attracting the highly skilled – motives for migration (personal, economic, social and political).

Assessment of a brain-drain/ brain-gain due to TTIP

There have been no studies conducted yet on the implications of TTIP on a brain-drain/ brain-gain. Based on the information gathered for the previous section on the impact of TTIP on high tech and skilled workers in the manufacturing sector, the following implications for the assessment of a potential brain-drain or a brain-gain in this sector can be derived:

²⁴¹ Based on a study by Kelo, M. and Wachter, B. (2004), "Brain drain and brain gain: Migration in the EU after enlargement", Academic Cooperation Association.

- The overall impact on high-skilled workers in Europe is expected to be small – this suggests that overall a significant brain-drain/ brain-gain would not be expected, all other things being equal.
- The impact is expected to be relatively higher on high skill-intensive manufacturing sectors such as electric machinery, chemicals and other machinery in comparison to low skill-intensive manufacturing sectors, such as food processing – in these sub-sectors it is expected that more movement among high-skilled professionals is expected. However, the overall impact is still relatively small and would not be termed as a brain-drain or a brain-gain.
- Wages for both skilled and less skilled workers are likely to rise by around 0.5 % due to the TTIP agreement – this is a relatively small increase, which is unlikely to justify a significant brain-drain or a brain-gain.
- The overall movement of workers *between sectors* due to the TTIP is less than 0.7 % in the EU, hence there are unlikely to be significant shifts of high-tech/ skilled workers across different economic sectors in the EU. In the US this “displacement index” is even lower, less than 0.5 %²⁴² - this demonstrates no significant brain-drain/ brain-gain due to TTIP across sectors in the two main economies impacted.

The literature suggests that the brain drain is likely to benefit large populations and middle income countries, while significantly weakening small and less developed countries²⁴³. Hence, this would suggest that even though in Europe, there is no significant brain drain/ brain gain expected due to TTIP, smaller and economically weaker economies are likely to be relatively more affected by a brain drain than larger and economically healthy economies. However, this might be also due to reasons other than TTIP, for example the effects of the economic crisis. The migration trends of highly skilled workforce also show that labour mobility is mostly evident in the health sector, R&D and education (box below), with mobility occurring to much smaller extent in the manufacturing sector.

Potential risk

One potential threat to the EU could be that the US offer more advantageous conditions for research and development, as evidenced by the success of Silicon Valley. With the TTIP, some European firms could potentially relocate R&D to the US. This would imply a small but potentially important – in value added terms – brain drain. This claim is substantiated by a report which studied the interaction between FDI and migration. The text concludes that there are higher stocks of inward FDI in German states hosting a large foreign population from the same country of origin²⁴⁴.

²⁴² CEPR (2013).

²⁴³ Hartmann, S. and Langthaler, M. (2009) “The Race for the best: a European perspective on the brain drain”, Social Watch report.

²⁴⁴ Buch et al. (2006) Where enterprises lead, people follow? Links between migration and FDI in Germany.

Box 4-3: General dimensions and flows of a brain-drain/brain-gain²⁴⁵

- During the year 2000, 22 % of 22 million migrants in the EU had tertiary education.
- In the case of European-born adults, almost 50 % of the outflow of highly qualified workers emigrates to North America.
- EU immigration inflows of foreign-born individuals come originate: 48 % from Africa, 25 % from North America and 22 % from Oceania.
- In the case of Europe, three major trends are apparent:
 - From developing countries to the EU – e.g. health workers.
 - Inter-European (East-West flows) – after enlargement of the EU in 2004.
 - From Europe to the US, and more recently, to developing countries – mainly scientists, researchers, students.
- Attracting highly qualified workers to the EU and preventing the loss of its own human capital by introducing selective immigration policies.

There is also literature on the impact of free trade agreements (e.g. CETA, NAFTA, etc.) on labour mobility, in particular on highly skilled workers. The key findings of this literature include:

- **Comprehensive Economic and Trade Agreement (CETA)** – a priority of this agreement is to promote the movement of skilled labour between the EU and Canada, including a temporary entry – business visitors, investors, intra-company transferees and various professionals²⁴⁶. This shows that labour mobility is encouraged by, and is expected to benefit from, free trade agreements.
- **North American Free Trade Agreement (NAFTA)** – facilitates the movement of four broad categories of workers: business visitors, traders and investors, intra-company transferees and professionals. The flows of high skilled migrants under this mechanism appear to be low, in particular for Canadian and Mexican workers entering the US (in 2006, around 65 thousand Canadians and around 9 thousand Mexicans entered the US under the specific visa). Flows to Canada are even smaller (in 2003, less than 11 thousand Americans and 235 Mexicans arrived on Canada, though the agreement was signed in 1994)²⁴⁷.
- The small or even negligible impact of free trade agreements on increasing cross-border flows in the Americas region is due to the fact that even though trade agreements facilitate labour mobility, the movement of workers is constrained by national immigration and security frameworks²⁴⁸.

²⁴⁵ Hartmann, S. and Langthaler, M. (2009) "The Race for the best: a European perspective on the brain drain", Social Watch report.

²⁴⁶ <http://www.lexology.com/library/detail.aspx?q=36f4f92e-57a7-4c21-a0f8-63a6af488ee7>.

²⁴⁷ MacLaren, B. (2008) "Labour mobility and trade in the Americas: Current frameworks and socio-economic implications," Canadian Foundation for the Americas.

²⁴⁸ MacLaren, B. (2008) "Labour mobility and trade in the Americas: Current frameworks and socio-economic implications," Canadian Foundation for the Americas.

- Cross-border movement of workers is much more likely to be facilitated by increasing investment flows than it is by mechanisms facilitating mobility in bilateral trade agreements²⁴⁹.

Overall, the literature summary above indicates that findings from other similar free trade agreements agree with our analysis on the impact of TTIP on high-skilled workers, i.e. that significant movement of skilled labour (a brain-drain or a brain-gain) is not expected due to the TTIP agreement. If anything, we are more likely to see a brain exchange as multinational firms operating on both sides of the Atlantic can relocate personnel easier with the removal of certain administrative burdens.

4.6. Innovation and longer term impacts

To what extent could the development of new international standards boost innovation in the EU?

Standards-related barriers to trade constrain innovation by entrenching inferior technologies, higher transaction costs and hindering the development of interoperable systems. Harmonised, international standards could bring increased market opportunities and more products to the marketplace, which is likely to encourage innovation, particularly as a means of increasing price-cost margins in the face of increased competition ^{250,251}.

The European Commission considers innovation as a driver of long-term sustainable growth and intends to help realise this through the EU 2020 flagship initiative "Innovation Union"²⁵². In order to promote innovation, it is important to:

- Ensure the largest possible markets.
- Limit non-market-based competition.
- Ensure strong IP protection²⁵³.

The TTIP approaches innovation through the removal of tariffs and NTMs. When transatlantic standards are in place products can be sold more easily in both the US and the EU. This is due to the fact that the obligation to meet dual technical requirements brings an added marginal cost. Therefore, implementing standards ensures both access to a larger market and increased competition. But how does this affect innovation? In theory, by increasing sales through access to larger markets, more revenue can be re-invested in next generation innovation. This is particularly important for firms which have high R&D costs and lower marginal costs of production, hence why many innovation firms are global.

Furthermore, in order to limit non-market-based competition "local content requirements" (LCR) need to be removed. This is a concept evident in the renewable industry and

²⁴⁹ Duval-Mace, N. (2006) "Canada-US labour market liberalization and bilateral trade agreements" Norman Paterson School of International Affairs, Carleton University.

²⁵⁰ http://www.nist.gov/public_affairs/factsheet/intl_standards.cfm.

²⁵¹ Ecorys 2009.

²⁵² European Commission (2013) Innovation Union – A pocket Guide on a Europe 2020 initiative.

²⁵³ <http://www2.itif.org/2013-innovation-maximizing-ttip-agreement.pdf>.

agricultural sector²⁵⁴. Both the EU and the US have expressed concern regarding LCRs, and they are definitely at risk of being removed^{255,256,257}.

Finally, the TTIP strives to ensure strong IP protection. Apart from geographical indicators (see section 4.6.2) legislation regarding IP is already quite harmonised, and will not be a significant barrier to promoting investment.

In conclusion, the TTIP is likely to promote innovation and therefore should also be of long term benefit for Europe's industries as they become more competitive. For this to occur, it is important for the EU to offer a good environment for R&D. With a TTIP, remaining regulatory differences can be more easily exploited by firms.

Box 4-4: Case Study: Standardisation of the automotive sector

The automotive sector has several NTMs in place and is the sector that stands to benefit most from the TTIP in terms of positive output. The most important sector specific non-tariff measures between the EU and the US are:

- US product standards (FMVSS) differ from the international standards (UNECE); for instance with regards to roof crush resistance and occupant protection in interior impact.
- Electric cars have dual standards for sockets and plugs.
- The American Automobile Labelling Act states that automobiles must be labelled with the share of US and Canadian made parts.
- Different cetane levels in diesel fuel between EU and US leading to costs to tune engines to these different levels.
- Double certification need caused by The European Union's Authorised Economic Operator (AEO) program and the US Customs-Trade Partnership against Terrorism (C-TPAT).
- US Intellectual property rights system (with first to invent principle).

With standards in place automotive manufacturers can access larger markets and limit non-market based competition, creating beneficial conditions for innovation.

The European Automobile Manufacturers Association (ACEA) finds that harmonisation will be difficult to achieve, but that it is necessary in order to remove market barriers. It is not a question about lowering (for example safety standards) but rather to find convergence and similarities in existing regulation. Environmental requirements with regard to the automotive sector have not yet been discussed. ACEA also claims that it seems as if regulators are going through a "talkative" phase, and there is solid potential of removing NTMs through the TTIP²⁵⁸.

Will intellectual property rights be at risk?

Since the US and EU IP systems are quite similar and highly developed, the intellectual property risks that could be at risk are limited and mainly relate to

²⁵⁴ http://www.iatp.org/files/2013_10_25_TTIP_KHK.pdf.

²⁵⁵ http://www.iatp.org/files/2013_10_25_TTIP_KHK.pdf.

²⁵⁶ http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf.

²⁵⁷ <http://www.ustr.gov/trade-topics/localization-barriers>.

²⁵⁸ Personal communication with Erik Bergelin. ACEA – 21-10-2014.

geographical indications and handling of trade secrets. A particular challenge for the EU will be to achieve recognition for its geographical indications (GIs) in TTIP, this has been a priority for the EU in all other FTA negotiations, but one which seems to be strongly opposed by the US. GIs protect many agricultural products in the EU, of which some would be vulnerable to competition from the US where protection of such products is limited. (The US also protects GIs but only to the extent required by TRIPS and does not recognise a number of EU GIs.)

The Transatlantic Consumer Dialogue, representing millions of consumers, is concerned that new "international benchmarks" for IPRs between the EU and US could weaken the rights to health, culture, and free expression of US and EU citizens by unfairly limiting access to knowledge and access to medicine. The European Commission has stated the TTIP will not bring in provisions that restrict internet freedom, such as in the controversial Anti-Counterfeiting Trade Agreement (ACTA) which was rejected by the EP.

The US is pushing for the inclusion of trade secrets in TTIP. However, since both the US and the EU have legislation in the pipeline, TTIP discussions on trade secrets would centre on finding a coherent approach.

Intellectual property rights (IPRs) and the manufacturing sector

Intellectual property industries are important contributors to the US and EU economies, supporting at least 40 million jobs and contributing to more than \$5 trillion (34.8 % of GDP) in the US alone²⁵⁹. Royalties and license fees based on IPRs were among the top five services traded between the EU and US in 2012, with EUR 15 billion exported by the EU and EUR 24 billion exported by the US²⁶⁰. Although IPRs are part of the services sector, a recent study shows that companies in the manufacturing and trading sectors are also among the largest importers and exporters of services²⁶¹. For instance, manufacturing firms can export intellectual property that they hold in exchange for royalties and licensing fees and import or export design support, research and development, or product testing²⁶².

An US Patent and Trademark Office study identified 75 industries (from 313 in total) as IP-intensive, which accounted for 34.8 % of GDP in 2010. Most of these industries are in the manufacturing sector²⁶³. Most subsectors are sensitive to trademark protection. Following the model of the USPTO study, in September 2013 the EPO together with OHIM published an analysis report on the contribution of IPR-intensive industries to economic performance and job growth in the EU-27 (data for Croatia were not available). The report considers that about half of EU industries are IP-intensive (trademark, design, patent, copyright and GIs). It concludes that approximately 56.5 million jobs (or 26 % of all jobs in the EU) were generated directly by these industries in the period 2008-10. To these, indirect employment added about 20 million jobs. The added value of IP-intensive industries, namely EUR 4.7 trillion, amounted to around 39 % of GDP over the same period. The report also finds that 88 % of EU imports and 90 % of EU exports are IPR-intensive. The

²⁵⁹ http://www.uspto.gov/about/ipm/industries_in_focus.jsp.

²⁶⁰ EPRS 2014, http://epthinktank.eu/2014/07/11/overcoming-transatlantic-differences-on-intellectual-property-ipr-and-the-ttip-negotiations/eu-us_trade_in_goods_and_services/.

²⁶¹ Barefoot and Koncz-Bruner 2012, "A Profile of U.S. Exporters and Importers of Services: Evidence from New Linked Data on International Trade in Services and Operations of Multinational Companies," Survey of Current Business, June 2012.

²⁶² CRS 2014.

²⁶³ ESA and USPTO 2012.

above mentioned studies have been criticised for their choice of methodology and for providing a one-sided view of the question of whether strong IPRs lead to innovation²⁶⁴.

Legislation on IPRs

Intellectual property rights (IPRs) give inventors protection and exclusivity of use for their innovations within the territory where they are registered. The World Intellectual Property Organisation (WIPO) and the WTO (annex agreement for Trade Related Intellectual Property Rights (TRIPS)) are the main international treaties dealing with recognition and enforcement of IPRs outside of the domestic or regional intellectual property (IP) system. Despite these treaties, differences between IP systems can impose non-tariff measures (NTMs) that inhibit transatlantic trade and investment. In general, the differences between the EU and US IP systems relate to²⁶⁵:

Scope and duration

The WIPO and TRIPS agreement contain minimum requirements for the scope and duration of TRIPS. The EU and US IP systems both comply with these requirements. In some cases however, the US system seems to provide for longer periods or broader scope than the EU²⁶⁶.

Patent systems and registering procedures

Both sides of the Atlantic can face difficulties with regard to IPR-related activities. EU companies can face legal uncertainty with the US Tariff Act, while US companies may have difficulties in the EU due to a lack of harmonisation between the Member States.

a) US: Section 337 of the US Tariff Act of 1930

On 12 January 2000, the European Commission (EC) requested consultations with the US in respect of Section 337 of the US Tariff Act and the related Rules of Practice and Procedure of the International Trade Commission. The EC alleged that those measures violate GATT and TRIPS²⁶⁷. Section 337 enables the US to declare the importation or sale of goods or services unlawful if they infringe valid US patents and have the effect to i) destroy or injure an industry that is efficiently and economically operated in the US; ii) prevent the establishment of such an industry; or iii) restrain trade and commerce in the US²⁶⁸.

b) EU: Lack of harmonisation

The European Patent Convention (EPC) provides a European-wide IP system, but does not provide EU-wide patents. Patents are still granted nationally, although harmonisation efforts are ongoing. Divergent languages can impose barriers to international trade and investment. Moreover, the US government remains concerned about the adequacy and effectiveness of IPR practices in specific EU member states²⁶⁹. Despite this, there does not appear to be any violation of the international treaties.

Hence, Section 337 could inhibit European trade and investment in the US. In this sense, the European IPRs are at risk if trying to compete with similar IPRs in the US. For the US, the new America Invents Act makes it possible for patents, issued outside of the US, to

²⁶⁴ EPRS 2014.

²⁶⁵ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

²⁶⁶ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

²⁶⁷ WTO http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds186_e.htm.

²⁶⁸ WTO http://www.wto.org/english/tratop_e/dispu_e/87tar337.pdf.

²⁶⁹ CRS 2014.

disqualify an American patent from being granted, because the claimed invention is not new. Previously, the foreign filing date did not preclude a US patent from being issued to an applicant in the US.

Box 4-5: IPR Principles

Harmonised IPR principles: America Invents Act of 2011

Before 2013, the US used a 'first to invent' system to define who can be granted a patent. With the America Invents Act, the US switched to the 'first inventor to file' principle that is similar to the 'first to file' principle used in the EU²⁷⁰. The new act came into effect in March 2013.

Main issues for TTIP

An issue for the TTIP is to ensure the rights of trademark holders and prevent the use of common names in international commerce, and that it addresses practices in Europe and the US that weaken intellectual property protection²⁷¹. Since the US and EU IP systems are quite similar and highly developed, there are only a limited number of issues that could be at stake in a TTIP. Most of the differences, which are namely in copyright or patenting software, do not indicate big trade barriers, especially as both parties had signed international treaties intended to facilitate trade²⁷². The main issues for TTIP concern geographical indications and handling of trade secrets.

Geographical indications

Geographical indications (GIs) are geographical names that act to protect the quality and reputation of a distinctive product originating in a certain region. The benefit does not accrue to a sole producer, but all producers in the region. Under the WTO TRIPS, the US and EU have both committed to providing a minimum standard of protection for GIs and an "enhanced level of protection" to wines and spirits that carry a geographical indication, subject to certain exceptions. Beyond this, the US and EU approaches to protecting GIs differ markedly. The US system tends to protect GIs through trademark law which can be bought and sold between producers. The country does have some GIs, such as the Idaho potato or Florida Orange, but these are very limited in number. The EU tends to offer more specific protections for GIs^{273,274,275}.

Given differing US and EU views on the treatment of GIs, there is debate about whether TTIP will include GIs. The EU may not be willing to negotiate a "comprehensive" FTA that does not include GIs, whereas the US has historically shown strong resistance to more extensive protection and enforcement of GIs²⁷⁶. Terms that the EU recognises as GIs are often regarded to be generic versions of trademarks in the US. From the US perspective, the EU approach raises national treatment concerns and adversely affects trademarks and widely accepted generic terms for food products. US officials fear that domestic producers

²⁷⁰ Gene Quinn, IP Watchdog 2013, A Brave New Patent World – First to File Becomes Law <http://www.ipwatchdog.com/2013/03/16/a-brave-new-patent-world-first-to-file-becomes-law/id=37601/>

²⁷¹ BCTT, <http://www.transatlantictrade.org/issues/intellectual-property/>.

²⁷² Bernd Hugenholz, director of the Institute for Information Law (IVI) in: Intellectual Property Watch 2013, <http://www.ip-watch.org/2013/05/15/ipr-lists-for-ttip-still-growing-risk-of-locking-in-old-ipr-regimes/>.

²⁷³ <http://www.euractiv.com/sections/agriculture-food/eu-us-face-food-labelling-spat-ttip-talks-302895>.

²⁷⁴ CRS 2014.

²⁷⁵ [http://www.europarl.europa.eu/RegData/etudes/STUD/2014/514007/AGRI_IPOL_STU\(2014\)514007_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2014/514007/AGRI_IPOL_STU(2014)514007_EN.pdf).

²⁷⁶ CRS 2014.

will not be able to sell food products, such as cheese, using common names such as Camembert or Feta^{277,278}. The treatment of GIs is also a point of debate in the WTO, where there are divergent US and EU views on proposals to create a multilateral register for wines and spirits and extend the “enhanced level of protection” beyond wines and spirits²⁷⁹. Meanwhile, the EU seems to be moving towards expanding GIs to protection on non-agricultural products²⁸⁰.

Possible implications for GI products in case of loss of GI protection

Because of their commercial value, the protection of GIs is a major priority for the EU. A study on GI products in the EU estimates that the sales value of EU GIs amounted to EUR 54.3 billion in 2011 of which about EUR 11.5 billion were EU export sales, i.e. 15 % of food and drink exports²⁸¹. More than half (56 %) of this value was accounted for by wines, about a third (29 %) by agricultural products and foodstuffs, with spirits representing 15 % and aromatised wines 0.1 %. Of this sale value, exports to extra-EU markets accounted for EUR 10.6 billion. The study has estimated the added value of the GIs to the sale value. The value premium for GI products in the EU averaged 2.23, meaning that GI products were sold 2.23 times higher than the same quantity of non-GI products. Especially wines and spirits received higher prices than their related standard products (resp. 2.75 and 2.57 times higher), with food products (including beers) recording a lower value premium of 1.55. In total this value premium accounted for EUR 29.8 billion in the EU economy.

Table 4-4: Sales Value of EU GI

Product	Value premium	Share of total
Wines	EUR 19.3 billion	65 %
Food products (including beers)	EUR 5.6 billion	19 %
Spirits	EUR 4.9 billion	16 %
Total	EUR 29.8 billion	100 %

Source: AND_international (2012).

The beverages sector would be especially hit by a loss of GI protection in the EU. Manufacturing of wines, spirits and beers make up about 69 % of total value added in this sector. The sales volume of GI products in these sectors make up respectively 50 %, 30.4 %, and 6.8 % of the total sales volume, which, assuming GI product values are 2.23 times higher than non-GI product values, could make up roughly a quarter of the total value added in the beverages sector²⁸². The prospects of the TTIP affecting GIs on wines and spirits are low, due to their enhanced level of protection under the WTO TRIPS. GI food products have a lower share of the total food products sector, but since this sector is the biggest manufacturing sector in the EU it could still have a substantial impact on the EU economy if GI food products lost their value premium.

²⁷⁷ USTR, 2012 National Trade Estimate Report on Foreign Trade Barriers, p. 148.

²⁷⁸ http://www.euractiv.com/sections/trade_industry/eu_mulls_geographical_indications_non_food_products_303554.

²⁷⁹ CRS 2014.

²⁸⁰ http://www.euractiv.com/sections/trade_industry/eu_mulls_geographical_indications_non_food_products_303554.

²⁸¹ AND-international 2012.

²⁸² This is a rough estimate due to lack of data, based on AND-international 2012 and Eurostat database.

Will the TTIP provide some durable opportunities for re-industrialising the EU?

The TTIP does improve the competitiveness of certain European manufacturers through the removal of NTMs, not only between the EU and the US but also towards third countries. This should bring some stability to European industries. In the long-term however, considering the attractiveness of investment in Asian markets, the outlook of other FTAs and that energy costs will not decrease, reindustrialisation might be difficult.

Looking at the total change in output of EUs industries as a result of the TTIP, not all sectors benefit. For example the metal industry will decrease production by 0.71 % or 1.5 % in a less ambitious and ambitious scenario respectively. In this case, European output is replaced by US imports. As previously described, US industries are more competitive in terms of lower energy and labour costs. This is not the most important factor for all EU manufacturing sectors, but is very important for the energy intensive metal industry. Given that the TTIP is not likely to reduce energy costs, these conditions will not change.

The commission has focused on improving the difficult situation of European industries through different strategies, such as "A Stronger European Industry for Growth and Economic Recovery"²⁸³. The policy strives to increase the industry share of GDP to 20 % by 2020, driven by recovery in investment and SME exports to third countries.

By the end of 2012, the US held 39 % of EUs total inward stocks²⁸⁴. As described in chapter 3.4 (question 6) the TTIP can be used to remove barriers to FDI. This is likely to mean an increase of US investments in Europe. Table 4-5 below shows the key host country factors in allocating FDI. However, the TTIP could mean that lower trade costs across the Atlantic lead to lower FDI since locating in the EU gives the US producers less of an advantage compared to concentrating production in the US (due to factors such as horizontal FDI, concentration-proximity trade-off). The same is true for EU producers. Vertical FDI, driven by differences in energy costs or labour costs, could increase. In both cases however, the competitiveness of EU producers relative to third countries (e.g. China) should improve and help secure the share of manufacturing in GDP. However the question as to whether this solves the issue of long term de-industrialisation is much harder to answer.

Table 4-5²⁸⁵: Host country determinants of FDI

Policy framework
Economic, political and social stability
Rules regarding entry and operations
Standards of treatment of foreign affiliates
Economic determinants
Market seeking (size, growth potential, access to regional and global markets)
Resources seeking (availability of natural resources, infrastructure)
Strategic asset seeking (skilled labour, R&D and technological infrastructure)
Business facilitation
Investment promotion
Investment incentives (tax and financial)
Costs related to corruption and bureaucratic inefficiency

Source: Adapted from UNCTAD (1998).

²⁸³ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0582:FIN:EN:PDF>.

²⁸⁴ http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Foreign_direct_investment_statistics.

²⁸⁵ http://ec.europa.eu/enterprise/policies/industrial-competitiveness/competitiveness-analysis/european-competitiveness-report/files/ecr2012_ch4_en.pdf.

The TTIP addresses some of the determinants described in table 4-5 above. However, the main economic factor “market seeking” remains relatively unchanged as the markets in the Asia Pacific region are still very attractive for investment given their growth potential²⁸⁶. Even though the EU gains access to the US market, this benefit might be short-lived, considering that the US is currently negotiating another substantial FTA called the Trans-Pacific-Partnership (TPP). It includes Australia, Brunei, Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam²⁸⁷. A study notes that there is a risk that the TPP becomes more significant than the TTIP, if it leads to an Asia-Pacific Economic Cooperation (APEC) agreement. This would include China, Japan, the US and a number of other emerging economies in south East Asia, notably excluding the EU²⁸⁸. This long term perspective is exogenous of the economic model used to calculate the net gains in GDP resulting from the TTIP.

4.7. Conclusions

The **overall impacts on trade and competitiveness** of a TTIP have been estimated in various studies. Effects are generally expected to remain under 1 % of change in outputs, also the impact of TTIP on energy – as a feedstock for manufacturing industry – might be limited. Also, it should be pointed out that even in sectors where overall exports and imports increase, this does not necessarily result in equally high changes in outputs. It is important to put these quantitative statements into context as there are substantial uncertainties involved. Outcomes strongly depend not only on the exact provisions in the TTIP itself, but are also subject to uncertainty because of the limitations of the models and scenarios which are necessary to provide quantitative estimates of impact and outcomes.

Any impacts of the TTIP are not likely to be evenly distributed over the EU Member States. Obviously, Member States that already have more trade with the United States are likely to be most affected. In particular the United Kingdom and to a lesser extent Germany and France will notice effects of the TTIP, but modelling results also show relatively high impacts in Spain, Scandinavia and the Baltic States.

Regarding **specific sectors**, tariff reductions as a result of the TTIP could probably have a positive impact on particular sectors such as the motor industry and processed foods, whereas some sectors, such as electrical machinery could decrease their output due to the TTIP. In the energy-intensive industries, the metals industry would probably be negatively affected, whereas the chemicals industry in particular might benefit. In the SME sector mixed effects can be expected, with export oriented SMEs profiting and others suffering from increased US competition.

The TTIP could impact the **EU internal market and administrative burden** of companies if tariff and non-tariff barriers were to be removed. However, studies suggest that the effects of TTIP on the total administrative burden of companies will be limited. The potential effects of TTIP on state aid are also interesting. Whereas the EU has rather strict state aid regulation, similar regulation is absent in the United States, although the amounts of state aid in both areas are of the same order. Hence, even if the TTIP resulted in softening EU regulations in this respect, it remains to be seen if this would also affect the level of state aid in financial terms.

Jobs and labour market impacts of TTIP could occur directly if labour provisions are included in the agreement, similar to NAFTA or to the currently negotiated CETA agreement between the EU and Canada, or indirectly as a result of increased competition.

²⁸⁶ <http://www.investopedia.com/articles/economics/09/factors-drive-investment-in-china.asp>.

²⁸⁷ <http://www.ustr.gov/tpp/overview-of-the-TPP>.

²⁸⁸ http://www.kas.de/wf/doc/kas_38104-544-2-30.pdf?140618145124.

Fears exist particularly in the EU that such competition would impair current high EU labour standards. However, there is little evidence available to suggest that this would occur. Current direct impacts of NAFTA on labour provisions and movement appear limited. Indirect effects due to increased competition might occur in sectors where competition with the US is particularly high and where labour costs are a decisive factor in this competition. The available evidence suggests that effects of the TTIP on the movement of highly skilled workers are likely to be limited. Some studies indicate that overall wages in the EU might rise by up to 0.5 % as a result of TTIP.

The TTIP is likely to have a positive impact on **innovation**, which is driven by three deciding factors: access to the largest possible markets, the degree of market-based competition and by ensuring strong IP protection. The TTIP will have a positive effect on these criteria. With lower tariffs and NTMs in place, manufacturers can more easily export products making it possible for them to compete on both sides of the Atlantic. With a larger customer base, companies can generate more revenues from their products, which enables increased re-investments in innovation. This is important for companies with high R&D expenditure and lower marginal costs and the reason why innovation firms are often globalised. Furthermore, the agreement is likely to minimise non-market-based competition through prohibiting Local Content Requirements and by regulating state aid. In addition, apart from Geographical Indicators, there are not likely to be any difficulties in harmonising IP regulation through the TTIP, which is beneficial for innovation.

5. CONCLUSIONS AND RECOMMENDATIONS

This section commences with an overall discussion and conclusions on the impact of the TTIP on the energy and manufacturing sectors. This is followed by a set of policy recommendations in the areas we believe need to be carefully examined by the European Parliament.

Before the TTIP can enter into force, it needs to be ratified by the European Parliament. Officially, the EP can only approve or reject the treaty and cannot require amendments. However, given the analysis made in the previous chapters, we find that the European Parliament needs to carefully consider several topics relating to the TTIP before it can give its approval to any TTIP agreement.

5.1. Conclusions

Although this report has claimed that the general impacts in terms of GDP are likely to be positive, some sectors are likely to benefit and others will not. It is therefore important to take both the benefits and negative aspects for the energy sector and the manufacturing industries into account.

There are many uncertainties regarding the effects of the TTIP. This is mainly due to two factors. First of all, the negotiation process has apart from a few leaked documents and published position papers, been very secretive, providing the public with little insight. This creates a situation where many outcomes are possible, and it remains uncertain which position the Commission will take on certain topics. Secondly, there are uncertainties regarding the report "*Reducing Transatlantic Barriers to Trade and Investment an Economic Assessment*", which is the foundation of the projected outcome of the TTIP. It uses economic modelling to display the impacts of the agreement in terms of change in manufacturing output, employment, exports and GDP. We do not question the validity of the model itself, but like any projection it is impossible to include all factors. From our point of view, it is necessary to take aspects exogenous of the model into consideration before taking a final decision. One important aspect is that the TTIP is being developed alongside other FTAs, such as the Trans Pacific Partnership. If such an agreement was signed the effects of the TTIP might be limited.

As previously mentioned, the negotiations have been very secretive. The reasons the Commission have given for this secrecy are that: "*For trade negotiations to work and succeed, you need a certain degree of confidentiality, otherwise it would be like showing the other player one's cards in a card game*"²⁸⁹.

From the Commission's viewpoint, keeping the TTIP behind closed doors has its benefits, but this does bring negative attention. Different environmental, labour and civil rights organisations have along with the public voiced their concerns regarding both the potential outcomes of the negotiations, as well as the lack of transparency. The concerns voiced should definitely to be taken into consideration. Our analysis indicates that the effects of the TTIP are not likely to be as dramatic as some position papers have predicted. Topics such as GMOs, shale-gas exploration and ISDS have all spurred an intense public debate. The lack of a constructive dialogue is likely to be due to the secrecy of the negotiations which has provoked a more "fear-based debate". With closed doors it becomes near impossible to have a meaningful social dialogue, as the Commission is unable to reveal its

²⁸⁹ European Commission DG Trade (n.d). "Questions and answers". Available from: <http://ec.europa.eu/trade/policy/in-focus/ttip/questions-and-answers/>.

detailed positions on a number of topics. These two issues are part of the rationale behind this report. While it is impossible to predict the outcome of the TTIP negotiation process, this reports attempts to shed light on the most important issues that require further Parliamentary scrutiny.

Energy

Security of supply, energy prices and the implications for the **renewable industry** are key political issues in the area of energy with regard to the TTIP. The commission has been insisting on including a chapter on raw materials and energy in the agreement and Karel de Gucht has recently expressed that he cannot imagine an agreement without such provisions²⁹⁰. However, US officials have remained non-committal, claiming they are not sure what the EU is expecting to achieve with such a chapter.

Regarding **security of supply** we discussed the potential of LNG imports to the EU. The TTIP will give the EU FTA status, meaning a "quasi automatic" export approval of US LNG. Apart from this, we do not foresee that the TTIP is likely to include any additional provisions on energy. Therefore, the agreement is likely to have a limited effect on security of energy supply. The resistance from US trade representatives to include an energy chapter is mostly due to the fact that low natural gas prices have boosted the competitiveness for their domestic industries. At the same time, low prices have led to a decrease in gas rig counts and well head completions. Therefore, it is crucial for the US government to find a good balance between both allowing and restricting LNG exports, where manufacturing industries are competitive due to low energy prices and shale gas remains profitable. Both sectors can create employment in an economy still burdened by the 2008 recession. Furthermore, the switch from coal to natural gas has caused a plunge in US carbon emissions related to energy production, which decreased by 12 % between 2005 and 2012²⁹¹.

With these factors in mind, the US finds itself in a beneficial situation, which will not be compromised by any exports that would potentially damage the economy. If anything, natural gas is likely to be shipped to countries in the Asia pacific region where spot prices are higher than on the European market. For the US to allow LNG exports where they would not acquire maximum return is both irrational and improbable.

Concerning **energy prices**, we find that they are not likely to become lower as a result of the TTIP. This is due to the factors explained above, meaning that large scale LNG exports from the US are not likely to reach the shores of Europe. This has a negative effect on certain energy intensive industries in the EU which are less competitive than their US counterparts. It is particularly important for the European metal industry whose output is expected to be displaced by US imports. Considering that energy costs comprise up to 60 % of the total cost of production for some metal manufacturers, lower energy prices in the US gives its domestic industries a substantial competitive advantage. By removing tariffs and NTMs it allows for a larger inflow of these cheaper products to the EU.

Regarding the **renewable energy industry**, we consider that the wind energy sector in particular is likely to benefit from the TTIP, as a result of the removal of local content requirements (LCR). The commission has stated in its position paper on raw materials and energy that they are against this type of requirement²⁹². This is also the case for the

²⁹⁰ Reuters (2014) "EU repeats demand for energy chapter in US trade treaty" Available from: <http://euobserver.com/news/125544>.

²⁹¹ Wall Street Journal (2013) "Rise in U.S. Gas Production Fuels Unexpected Plunge in Emissions" Available from: <http://online.wsj.com/news/articles/SB10001424127887324763404578430751849503848>.

²⁹² http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151624.pdf.

USTR, which has also pointed out LCR as a barrier to trade. If removed, European producers of wind energy equipment will gain access to more segments of the US market. This is beneficial for the EU economy which has a trade surplus in this sector towards the US.

Manufacturing industries

Important TTIP topics regarding manufacturing industries according to our report are the **impacts on specific sectors, innovation, implications for SMEs** and the **distribution of effects between the member states**. The TTIP will impact the manufacturing industries in different ways, most will experience an increase in output while a few can expect a decline. It is important to note that the positive effects of the TTIP in terms of GDP might in some cases be overstated. In its public communication the Commission has often used the “ambitious scenarios” that were projected by the CEPR report. This is inappropriate in some cases where the full removal of non-tariff measures might be difficult, such as the chemical sector where EU and US legislation have been proven to be divergent. For example, we do not anticipate full convergence between the (EU) REACH and the (US) TSA regulation, meaning that a less ambitious scenario of increase in output can be expected.

Regarding the **impacts on specific sectors**, the general conclusion is that the agreement has a positive effect on most manufacturing industries with a projected average increase in GDP. The Automotive sector, other manufacturers and processed foods are likely to benefit the most, while the metal and electrical machinery sectors are likely to see a decline in output. The processed foods sector might remain restricted in trade due to complications for Geographical Indicators in relation to Intellectual Property Rights (IPR), which could burden European manufacturers. Geographical indications (GIs) are geographical names that act to protect the quality and reputation of a distinctive product originating in a certain region. The benefit does not accrue to a sole producer, but all producers in the region. The export value of products benefiting from EU GIs was EUR 11.5 billion in 2011. The US does not recognise all EU GIs and complications regarding this topic are expected.

The TTIP could be especially important for SMEs which are relatively more burdened by NTMs than larger enterprises. This is due to the fact that companies with smaller market shares still need to comply with the same regulatory procedures. In the end, the cost of NTMs for SMEs is a larger percentage of total expenditure than for big corporations. If these types of barriers are removed there are more possibilities for smaller companies to enter the global market.

Innovation is likely to benefit as a result of the TTIP. Through the removal of NTMs that hinder companies from entering the international market companies can gain access to more consumers. In, theory, an increase in turnover would lead to larger re-investments in innovation. This is the main reason why innovation firms are global.

Regarding the **distribution of effects** between the member states, the EU member states will not gain equal benefits from the agreement. Countries already deeply involved in transatlantic trade such as the UK, Ireland, Sweden and Finland will gain the most, whereas France and Austria will probably gain the least.

Labour

Labour organisations have voiced concerns suggesting that **labour standards** are going to become lower as a result of the TTIP. We did not find evidence of this being true. It appears very unlikely that there will be any provisions for workers’ rights in the agreement

that could overtake current standards (at most the TTIP would state minimum requirements). What is more probable is that the agreement will try and **facilitate the movement of skilled labour** between the countries through the harmonisation of regulatory procedures. However, we did not find evidence for a **brain-drain** or **brain-gain**, also given the rather equal level of skilled workers on both sides of the Atlantic.

5.2. Policy recommendations

The above discussion leads us to the following policy recommendations for the EP.

Be careful about degradation of existing legislation

The European Commission has repeatedly claimed that an increase in trade will not come at an expense of environmental or social protection. This is a statement that the Commission will have to abide by. However, even if current legislation is not removed, there is need to worry about the implementation of certain policies. The discussion surrounding the Fuel Quality Directive is a good example. The legislation was a complement to the climate and energy package of 2008 and requires suppliers of petrol, diesel and gas used in road transport, to reduce the lifecycle greenhouse gas emissions of fuel by 10 % by 2020. It assigns a higher carbon intensity for tar sands than for other crude oils. This has negative implications for automotive fuels extracted from unconventional resources with higher climate impact²⁹³. US trade representative Michael Froman has expressed concerns over the directive as a barrier to EU-US trade. After intensive US and Canadian lobbying from both government and industry groups, the EC has proposed a weakening of the legislation²⁹⁴. According to the proposal, fuel suppliers would only be required to use one EU average carbon value, meaning an industry-wide average value instead of different company-specific carbon values for their various sources of oil. Environmentalists have suspected that the weakening of regulation is due to TTIP and CETA negotiations. If this is a fact or not remains unclear, but the “watering down” of the directive must be considered an untimely event.

From this perspective, we recommend a close monitoring of important pieces of legislation that are identified as substantial barriers by US trade representatives, such as the FQD, but also the REACH regulation. The latter has been identified as a directive which implementation procedure can be modified to better suit the TTIP. Commissioner Karel de Gucht writes in a reply to Client Earth and Centre for International and Environmental Law that the chemical section will be excluded from the TTIP, as regulation is simply to different²⁹⁵. Mutual recognition would only be applied after careful evaluation of EU and US legislation. Sceptics still claim that through confidentiality clauses or by slowing down the rate of which substances are identified the resulting procedures can still be modified.

Consider if the positive aspects of Investor-State Dispute Settlement (ISDS) outweigh its drawbacks

The ISDS is one of the most debated aspects of the TTIP. From our point of view, the ISDS mechanism has serious potential drawbacks on the implementation of governmental policy. It is essentially applied for socialising the stakes related to foreign direct investments as governments take over parts of the entrepreneurial risk²⁹⁶. There are many examples where this has been done by companies that object to governmental

²⁹³ <http://www.euractiv.com/sections/energy/tar-sands-mystery-and-smoking-ttip-gun-301552>.

²⁹⁴ <http://www.euractiv.com/sections/energy/fqd-oily-tunnel-will-there-be-light-end-302921>.

²⁹⁵ http://trade.ec.europa.eu/doclib/docs/2014/october/tradoc_152820.PDF.

²⁹⁶ <http://www.industrial-europe.eu/news/list2.asp?stid=224>.

policy (for example the German decision to discontinue nuclear energy production as a result of the Fukushima accident). The concerns regarding this mechanism are real, keeping in mind that it has already become an issue at the European level when the principle has been applied in other agreements. However, the extent to which the ISDS will secure investments remains unclear. As we have described previously in this report, the mechanism is used at an increasing rate by developed countries.

The ISDS partly goes against national sovereignty, as it limits countries rights to implement certain policies. Critics have even gone so far as to say that it is a threat to democracy²⁹⁷. Considering the fact that the ISDS is applied intra-EU and between NAFTA countries, there has been little reason to believe that the TTIP would not include such a provision for investment. The EC discourse on the matter strengthened this argument, as they have mostly been concerned with “how” to include ISDS, not “if”²⁹⁸. Commissioner-designate for Trade Cecilia Malmstrom has claimed that it is very important to “ensure that ISDS cannot be used to inhibit the right to regulate in the public interest”. How this could be executed remains unclear, as even the current intra-EU legislation has been criticised as flawed. From our point of view, we suggest that it is crucial to follow up on the prospects for ISDS in the TTIP, but also on the current EU regulation on the matter. This is important considering that even if the ISDS is excluded from the free trade agreement, US companies are still able to apply the mechanism through their European subsidiaries. As an example, the high profile ISDS case in Canada, where Lone Pine Resources Inc. chose to sue the Canadian province of Quebec over its ban on shale gas extraction²⁹⁹. The company has its headquarters in Calgary, but filed the suit under provisions of the NAFTA agreement through a subsidiary in Delaware, US³⁰⁰.

Examine energy security in the context of the whole EU legislation, rather than expect high energy security benefits.

As described above, considering the reluctance of the US to include a chapter devoted to energy, the EU is unlikely to experience either an increase in energy security or lower energy costs. There have been discussions in the US congress regarding the need to “speed up” non-FTA approval for natural gas exports in order to protect its allies. However, since 2008 US policy has been dominated by realism, indicating a pursuance of self-interest³⁰¹. This means that there will be no decision taken that could potentially harm the US economy, and LNG exports are likely to remain limited. Furthermore, a removal of the export ban on crude oil has not even been on the table. With these factors in mind, we must realise that the TTIP is not the “game-changer” for energy security in Europe that certain parties would have wished for.

Pre-emptive action should be considered regarding the decrease in employment for certain sectors.

The metal and electrical machinery sectors will see a decreased output as a result of the TTIP. The Commission is aware of this fact and claims that: “*The idea is that the industries that will grow the most as a result from the TTIP will pull away workers from other sectors by offering higher wages*”.

²⁹⁷ <http://rt.com/op-edge/174636-isds-bedtime-for-democracy/>.

²⁹⁸ <http://ec.europa.eu/trade/policy/in-focus/ttip/questions-and-answers/>.

²⁹⁹ http://www.huffingtonpost.ca/2013/10/03/quebec-fracking-ban-lawsuit_n_4038173.html.

³⁰⁰ <http://www.cbc.ca/news/business/ottawa-sued-over-quebec-fracking-ban-1.1140918>.

³⁰¹ <http://www.iar-gwu.org/node/453>.

This is an extremely simplified way of looking at it, and it assumes total flexibility in the movement of labour. In reality, this is not the case. There is always unemployment due to a mismatch in location, something that could be more difficult to solve intra-EU than within a single member state. It is also necessary to minimise the level of unemployment due to differing skillsets, a factor very relevant in relation to the TTIP where the metal and electrical machinery workers will need to be relocated to industries expecting an increase in output and employment.

Therefore, we recommend pre-emptive action on the sectors that are threatened with a drop in employment. By approximating what levels and types of skillsets are at risk resulting from the TTIP, it is possible to identify the appropriate measures (education, labour market flexibility programs) in order to limit the time of unemployment.

Continue pursuit of the Europe 2020 targets

Even though both labour and energy costs are lower in the US (and in many other economies) than in the EU, industries within the Member States have remained competitive. This is due to a highly skilled workforce, high domestic content of export goods, and comparative advantages linked to complex and high-quality products³⁰². The Commission's industrial competitiveness report gives special attention to the continued pursuit of gains in **energy efficiency** and more effective **innovation**, target which are specified in the **Europe 2020 strategy**. The TTIP brings opportunities to enforce these strengths, as for example innovation is boosted by an increase in market access.

As mentioned before, the TTIP will bring benefits to European manufacturing industries, but keeping in mind that other FTAs are being developed alongside the TTIP, these opportunities are not likely to be durable. We suggest that it is crucial to continue efforts to improve industrial competitiveness and facilitate sustainable growth which is less dependent on the use of resources.

Preserve EU standardisation processes

Standards are better developed within the EU than in the US, as the process is more inclusive and transparent. A diligent process is necessary because when a European standard is applied, it disqualifies all additional member state product requirements. International standards are not immediately recognised but rather implemented into EU legislation by the standard setting bodies CEN and CENELECT. US manufacturers have targeted this process as a barrier to trade, claiming it is not in line with WTO Technical Barriers to Trade (TBT) agreement³⁰³. Both European companies and standardisation agencies have expressed their worries regarding a potential weakening of the EU process by recognising US standards. This is difficult considering that the US has a completely different implementation process than the EU, where in many cases standards are developed independently and then applied on a state level. International standards are still used in many cases within the EU, but they have to go through a legislation procedure. We recommend a close monitoring of the development of provisions regarding any direct or indirect recognition of mutual standards.

Call for re-estimation of TTIP projections

When the TTIP agreement is finalised, we suggest that that it will be very important to do an additional evaluation of the projected outcomes. As acknowledged in this report, some

³⁰² http://europa.eu/rapid/press-release_IP-14-989_en.htm.

³⁰³ National Electrical Manufacturers Association. Position paper Transatlantic Trade and Investment Partnership.

NTMs such as the REACH regulation are likely to remain. However the extent to which this will affect trade in the chemical sector is not clear. When the agreement is final, it will be necessary to evaluate the extent to which barriers are still in place in order to gain a realistic picture of the economic outcomes of the TTIP. This might require substantial effort, but for an agreement of this magnitude this would still be rational. In theory, if the European sectors likely to benefit from the TTIP remain restricted due to NTMs, the total increase in GDP will decrease. The same effect will evolve if all NTMs are removed for those EU industries that are expecting a decline in output as a result of the agreement (such as the metal sector). A more "ambitious" NTM removal scenario for these industries actually means a further decrease in output. To conclude, the total projected change in GDP depends to a large extent upon which sector's tariffs and NTMs are removed, and an assessment which takes these differences into account is of great importance. Such an updated report would increase the trustworthiness of the projections and would lead to a more informed decision by the EP.

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Interviews

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- Stina Wallstrom – Teknikforetagen (Electrolux, IBM, Volvo, Tetra Pak).
- Pieter de Pous – European Environmental Bureau (EEB).
- Pierre Tardieu and Vilma Radvilaite – European Wind Energy Association (EWEA).
- Albert Bressand - Professor of International Strategic Management in Energy at Rijksuniversiteit Groningen, Senior Fellow at the Columbia Center on Sustainable Investment.

Manufacturing industries

- Gabriel Felbermayr – Professor at the German economic expertise centre IFO.
- Laura Degallaix – European Environmental Citizens Organisation for Standardisation (ECOS).
- Elena Vybridina - European Association of Metals (Eurometaux).
- Erik Bergelin – European Automobile Manufacturers Association (ACEA).
- Gabriella Almborg and Maria Trallero, the European Federation of Pharmaceutical Industries and Associations (Efpia).
- René van Sloten - European Chemical Industry Council (Cefic).

ANNEXE 1: CASE STUDIES

The automotive sector

Factor	EU		US*			
	Ecorys	CEPR		Ecorys	CEPR	
		Less amb.	Ambitious		Less amb.	Ambitious
Sector output	+ 2.2 %	+ 0.24 %	+ 1.54 %	+ 0.7 %	- 0.57 %	- 2.78 %
Total export	+ 4.3 %	+ 20.11 %	+ 41.75 %	+ 5.3 %	+ 34.36 %	+ 59.47 %
Bilateral export	-	+ 71 %	+ 148.7 %	-	+ 207.4 %	+ 346.8 %

* Ecorys study talks about NAFTA, CEPR about US.

The automotive industry could gain substantial benefits from the TTIP. It is a globalised sector and several large car manufacturers have factories on both sides of the Atlantic (BMW, Daimler, VW; General Motors, Ford, Chrysler). In contrast, the car parts industry is less globalised and more strongly dominated by SMEs. The ad valorem equivalent NTMs are high, with EU exports facing 26.8 % additional costs and US exports with 25.5 %³⁰⁴.

In 2013, the EU produced 23.2 % (14.611.284) of the world's cars, whereas 11.0 % (6.956. 158) were produced in the NAFTA³⁰⁵. 26.8 % per cent of total EU vehicle exports go to the US, making it the second most important export destination. The EU is the fourth largest importer of US vehicles, accounting for 10.5 % of total US car exports³⁰⁶.

The flat tariff for importing automobiles into the EU is 10 % of their value, whereas the US applies a 2.5 % tariff for cars and a 25 % tariff for pick-ups and commercial vans³⁰⁷. Apart from these "direct" tariffs, the trade is hindered by a number of regulatory differences and other non-tariff measures. The most important for this sector are:

- Different safety standards.
- The Corporate Average Fuel Economy (CAFÉ) Payment charged on manufacturers and importers on the sales-weighted average fuel efficiency of their entire fleet. Hence, the measure is disadvantageous to the EU luxurious car manufacturing industry.
- The average level of the CAFÉ Payment will rise from 38 miles per gallon in 2014 to 54.5 miles per gallon in 2025 in order to increase fuel efficiency³⁰⁸.
- The Gas Guzzler Tax is the gas counterpart of the CAFÉ Payment and applies only to passenger cars, not to sport-utility vehicles (SUV's), mini-vans and pick-up trucks. EU manufacturers specialise in passenger cars, favouring US producers of SUVs.

³⁰⁴ Ecorys (2009).

³⁰⁵ http://www.acea.be/uploads/publications/POCKET_GUIDE_13.pdf.

³⁰⁶ Ibidem.

³⁰⁷ <http://www.caranddriver.com/features/free-trade-cars-why-a-useurope-free-trade-agreement-is-a-good-idea-feature>.

³⁰⁸ National Highway Traffic Safety Administration. 2017-2025 model year light-duty vehicle GHG emissions and CAFÉ standards; supplemental.

- The American Automobile Labelling Act states requires vehicles to be labelled with to what extent it is produced of US and Canadian made parts.
- The lower cetane rating (in fuel) in the US³⁰⁹.

The 2009 study by Ecorys on *Non-tariff measures in EU-US trade and investment* estimated that a reduction of sector-specific non-tariff barriers is expected to lead to an increased output of 2.2 % in the EU and 0.7 % in the US. This is due to an increase in exports of 4.3 % (EU) and 5.3 % (US). A later study performed by the Centre for Economic Policy Research (CEPR), *Reducing transatlantic barriers to trade and investment*, analysed the results of the TTIP through two scenarios:

- **Less ambitious free trade agreement** consisting of a 10 % reduction in trade costs from non-tariff measures and a tariff removal of 98 %.
- **Ambitious scenario**, including the elimination of 25 % cent of non-tariff measure related cost and 100 % of tariffs³¹⁰.

They found that in a less ambitious scenario EU output will grow by 0.24 % against a 0.57 % decline of US output. In an ambitious scenario EU output will increase with 1.54 % in contrast to a US output decline of 2.78 %.

Both studies found positive effects on EU output, indicating an increase in employment on the European continent. In addition, the removal of non-tariff barriers on both goods and to a lesser extent on services outweighs direct spillovers which will increase EU competitiveness and market access to the US.

For the US, Ecorys also found a slight increase in output, but the CEPR contradicts this with reference to increased EU market access and competitiveness, suggesting a decline in jobs. In contrast, export is expected to rise heavily, indicating an increase in competitiveness and market access. In addition, Ecorys foresees potential for addressing standardisation issues on the global scale and improving convergence in this area, resulting in a possible prices reduction for both consumers and producers³¹¹.

Chemicals

Factor	EU			US*		
	Ecorys	CEPR		Ecorys	CEPR	
		Less amb.	Ambitious		Less amb.	Ambitious
Sector output	0.4 %	0.09 %	0.37 %	-0.6 %	0.25 %	-0.40 %
Total export	1 %	5.07 %	9.26 %	1.6 %	7.71 %	11.49 %
Bilateral export	-	20.00 %	36.20 %	-	23.00 %	34.20 %

³⁰⁹ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

³¹⁰ Centre for Economic Policy Research (CEPR), *Reducing transatlantic barriers to trade and investment: an economic assessment*, 2013.

³¹¹ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

The EU is the world's second largest chemical producer with 17.8 % of global turnover (EUR 558 billion), followed by the US with 14.6 % (EUR 456 billion)³¹².

The most important trading partners of the EU are Norway, Switzerland, Turkey, Ukraine and Russia with an export share of 26.2 % in 2012³¹³. NAFTA, the second largest trading partner, comes close with 22.6 per cent³¹⁴. In 2012 the EU had a trade surplus with the US of EUR 32.5 billion in exports and EUR 21.3 billion in imports³¹⁵.

The chemical industries in the EU and the US are both subject to comprehensive legislation under the Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (EU) and Toxic Substances Control Act (TSCA) (US) resulting in vast regulatory differences. These entail classification and labelling requirements for chemical products, the threat of 100 % container scanning, restrictions on the use of specific chemicals and different levels of chemical security regulations.

Ecorys has calculated that EU non-tariff measures caused a 23.9 % trade cost for chemicals imports from the US and 21.0 % trade cost for EU exports to the US³¹⁶. As not all non-tariff measures can be removed, the expected increase in production is 0.4 % in the EU and a decline of 0.6 % in the US due to increased competition. Although percentages differ, the CEPR has found similar results with changes in EU output respectively less ambitious and ambitious 0.09 % and 0.37 % and changes in US output less ambitious and ambitious 0.25 % and -0.4 %³¹⁷.

In 2012 the EU chemicals sector employed 1.19 million people and due to the slight increase in production it is likely that this figure will grow³¹⁸. In addition, production growth in the chemicals industry will positively affect the construction and processed foods sector due to its enabling character and will probably contribute to increased employment³¹⁹.

In the long run, EU exports will increase by 0.1 % and US exports by 0.3 %³²⁰. Yet, due to the fact that the EU chemical export is larger than US export, the EU's absolute export growth is larger than in the US. The CEPR estimations for bilateral export move in the same direction, yet percentages are considerably higher, respectively 20.0 and 36.2 per cent for EU export against 23.0 and 34.2 per cent for US exports. The difference is caused by the level of regulatory coherence achieved; Ecorys assumed only partial convergence whereas CEPR even assumed high regulatory coherence in the less ambitious scenario.

³¹² <http://asp.zone-secure.net/v2/index.jsp?id=598/765/42548>.

³¹³ Ibidem.

³¹⁴ Ibidem.

³¹⁵ Ibidem.

³¹⁶ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

³¹⁷ Centre for Economic Policy Research (CEPR), *Reducing transatlantic barriers to trade and investment: an economic assessment*, 2013.

³¹⁸ <http://asp.zone-secure.net/v2/index.jsp?id=598/765/42548>.

³¹⁹ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

³²⁰ Ibidem.

Non-tariff barriers chemical industry

EU-US export:

- Lack of federal pre-emption in pressure equipment.
- The difference between the EU Pressure Equipment Directive (97/23/EC) and the US American Society of Mechanical Engineers (ASME) code leading to compliance cost.
- Foreign Direct Investment (FDI) from the EU to the US metal sector is reviewed under the Foreign Investment and National Security Act as these can be considered strategically important investments. The procedure limits and delays investments.
- The Buy American Act dictates governments on all levels to procure materials from American companies, effectively excluding EU producers.
- Double certification induced by security measures from the EU Authorised Economic Operator (AEO) and the US Customs-Trade Partnership against Terrorism (C-TPAT).
- Restrictions on ownership or renting land by foreign companies.
- Customs procedures (i.e. a 100 per cent container scan) delaying transport.
- Use of the imperial as opposed to the metric system.³²¹

EU-US imports:

- Divergence between the EU Pressure Equipment Directive (97/23/EC) and the US American Society of Mechanical Engineers (ASME) code. Although enterprises are allowed to demonstrate compliance in other ways, this also results in compliance cost.
- Diverging standards demanded by the client instead of the authorities; harmonisation of standards would positively affect bilateral trade in this area.

Metals and metal products

Liberalised trade scenarios	EU		US	
	CEPR		CEPR	
Factor	Less amb.	Ambitious	Less amb.	Ambitious
Sector output	-0.71 %	-1.5 %	0.27 %	0.45 %
Total export	7.15 %	12.07 %	12.79 %	22.45 %
Bilateral export	42.40 %	68.20 %	52.70 %	88.10 %

In 2012, bilateral trade between the EU and the US in metal and metal products was considerably smaller than bilateral trade in the automotive and chemical sector. Total EU

³²¹ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

imports from the US accounted for 3.53 % of total trade, whereas EU exports to the US was 5.61 %³²².

The EU import tariff for metal and metal products is 1.6 %, whereas the US charges 2.75 %. Although NTMs in the metal sector have decreased in the past few years, export in both directions face barriers. Ad valorem equivalent NTMs are 17 % for EU exports and 11, 9 % for US exports.

Non-tariff barriers metal and metal product industry

EU-US export:

- Lack of federal pre-emption in pressure equipment.
- The difference between the EU Pressure Equipment Directive (97/23/EC) and the US American Society of Mechanical Engineers (ASME) code leading to compliance cost.
- Foreign Direct Investment (FDI) from the EU to the US metal sector is reviewed under the Foreign Investment and National Security Act as these can be considered strategically important investments. The procedure limits and delays investments.
- The Buy American Act dictates governments on all levels to procure materials from American companies, effectively excluding EU producers.
- Double certification induced by security measures from the EU Authorised Economic Operator (AEO) and the US Customs-Trade Partnership against Terrorism (C-TPAT).
- Restrictions on ownership or renting land by foreign companies.
- Customs procedures (i.e. a 100 per cent container scan) delaying transport.
- Non-use of the metric system³²³.

EU-US imports:

- Divergence between the EU Pressure Equipment Directive (97/23/EC) and the US American Society of Mechanical Engineers (ASME) code. Although enterprises are allowed to demonstrate compliance in other ways, this also results in compliance cost.
- Diverging standards demanded by the client instead of the authorities; harmonisation of standards would positively affect bilateral trade in this area.
- The earlier mentioned double certification.
- Variances in custom regulations and procedures between the EU Member States³²⁴.

Unfortunately Ecorys has not estimated production and export figures; therefore this section is only based on the CEPR study. CEPR has calculated that a TTIP will lead to a decline of EU output of metals and metal production; in a less ambitious scenario, this decline will reach 0.71 per cent and in an ambitious scenario decline will account for 1.5

³²² <http://wits.worldbank.org/CountryProfile/Country/EUN/Year/2012/TradeFlow/Import/Partner/USA/Product/All%20Groups#>.

³²³ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

³²⁴ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

per cent³²⁵. In contrast, the US will witness a slight rise in output in both the less ambitious and ambitious scenario, respectively 0.27 and 0.45 %. Hence, EU competitiveness will decline indicating a decrease in EU employment.

Biomass (Sustainability Standards)

Introduction

The big difference between the US and the EU is the recognition that biomass power is a valued and essential part of the renewable energy portfolio because it plays a key role in decarbonising the power and heat sectors. Therefore, Europe needs more biomass than it can produce. Currently around 5 % of final energy consumption is from bio-energy. Projections suggest that the use of biomass can be expected to double, and contribute to around half of the 20 % renewable energy target in 2020.

By 2020, Europe may annually import as much as 40 million metric tons of pellets from all sources, up from today's 3.5 million metric tons of total pellet imports, says bio-energy consultant William Strauss³²⁶.

Current rates for a ton of pulpwood delivered to a Georgia mill averages \$27 per metric ton. Because of such low rates, almost all pellets exported to Europe originate in the Southeast. However, by the time the manufactured pellets reach Europe, their current cost is \$165 per metric ton, insurance and shipping costs not included.

It is not certain if the existing European export market will continue to expand. The European Commission is re-evaluating the need for mandatory sustainability criteria at the EU level³²⁷, and there is significant pressure from the power sector and biomass associations. Forest certification will only partially satisfy the requirement, which will need to be supplemented by calculations of GHG savings, and considerations of competition for food, local prosperity, and well-being of workers and local population. The EU has already recognised a number of certification schemes.

Member states have expressed concerns that an expansion of international trade of biomass and increasing imports from third countries may lead to the unsustainable production of biomass. As a result, the main importing countries of biomass have started to develop national sustainability requirements for bio-energy.

What are the current trade barriers between EU-US?

Tariff barriers

There are currently neither duties nor quotas on wood pellets.

Non-tariff barriers

Bioenergy is recognised by the Renewable Energy Directive (RED) as a source of renewable energy that would count towards its targets and objectives. In response to concerns about the sustainability of biofuels for transport, the RED introduced mandatory "sustainability criteria" that biofuels needed to comply with to be eligible for support and to count towards targets. Pursuant to Article 17 (9) of the RED, "the Commission shall report on requirements for a sustainability scheme for energy uses of biomass, other than

³²⁵ Centre for Economic Policy Research (CEPR), *Reducing transatlantic barriers to trade and investment: an economic assessment*, 2013.

³²⁶ <http://www.renewableenergyworld.com/rea/news/article/2012/06/where-do-all-the-wood-pellets-go>.

³²⁷ <http://www.pellet.org/media/publications/2011-07-23-netherlands-belgium-trip-report.pdf>.

biofuels and bio-liquids, by 31 December 2009. That report shall be accompanied, where appropriate, by proposals for a sustainability scheme for other energy uses of biomass". In its report to the Council and the Parliament, the Commission committed to further consider the issue and report on "whether national schemes have sufficiently and appropriately addressed the sustainability related to the use of biomass from inside and outside the EU, whether these schemes have led to barriers to trade and to the development of the bio-energy sector". It would, inter alia, "consider if additional measures such as common sustainability criteria at EU level would be appropriate".

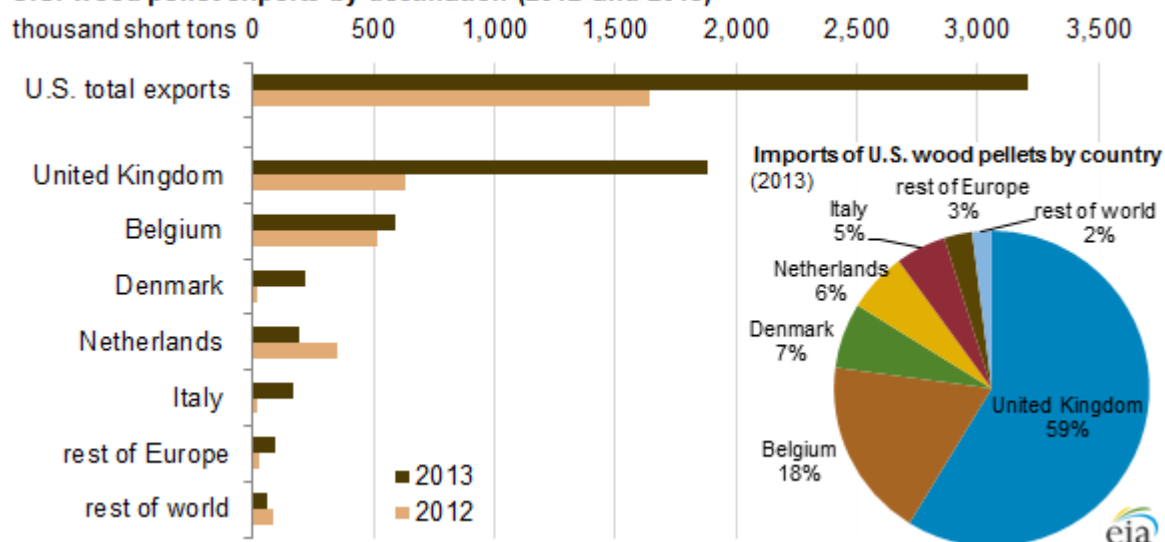
Standards will not be enforceable.

Most of the focus in the debate about biofuel and possible biomass standards has been on the criteria. But regardless of how comprehensive and strict standards might appear on paper, they are worth little if there is no effective mechanism for enforcing and monitoring them and holding companies to account. Scandals such as those over horse meat in the British food chain or illegal and harmful breast implants happened even though regulations exist which make food adulteration with unauthorised horse meat or industrial silicone implants illegal. They happened because such regulations have not been properly enforced and companies could get away with breaching them. For biofuels or biomass, regulatory enforcement mechanisms, let alone criminal sanctions, are not even on the agenda. Companies can meet EU biofuel standards by paying a consultancy firm of their choice to write a report which states that standards have been met. The UK plans to introduce biomass standards this April. It is expected that those UK biomass standards will require nothing of US or Canadian pellet suppliers other than to insist that they must provide a letter from the 'forest owner' saying that the wood is "sustainably sourced". Without any prospects of a regulatory mechanism being created (and properly funded) by the EU, discussions as to what exactly criteria should be saying are effectively meaningless.

What are the current trade flows between EU-US?

More than 2 million tons of wood pellets were shipped in 2011, a 300 % increase from 2008. The main reason behind the explosive growth is the growing wood pellet demand from utilities in the Netherlands, the UK and Belgium.

U.S. wood pellet exports by destination (2012 and 2013)



Transportation cost is a large part of the total cost of wood pellets; for example, transportation accounted for a quarter of the delivered price of wood pellets from the US to the Netherlands in mid-2013³²⁸.

What are the potential impacts of the TTIP?

Considering that there are no tariffs in combination with the fact that there is currently no need in finding convergence in the sustainability criteria, the trade in wood pellets is unlikely to increase. The trade is more likely to be affected by factors exogenous of the TTIP, such as the high transport costs or by increasing European demand for biomass in order to meet the 2020 climate targets.

Wind energy technology

Introduction

The expansion of renewable energy has increased by 62 % in the EU-27 between 2000 and 2010. In the wind energy sector, Europe presents the highest revealed comparative advantage index³²⁹.

What are the current trade barriers between EU-US?

A major trade barrier concerning the wind energy sector is "local content requirements"³³⁰ (LCR). This makes it a necessary for domestic or foreign companies to source a certain percentage of intermediate goods from local manufacturers or producers. It can also be implemented through subsidising local production. LCRs can be applied to both goods and services. The legislation is often motivated by the potential creation of green and local jobs. On the other hand, LCRs do not allow for the optimal allocation of resources as it limits free trade. This type of market barrier is evident in the renewable energy sectors (mainly wind and solar) in the US and in EU member states such as Spain, Italy, France and Greece. This led China to file a dispute before the WTO on Italy and Greece in 2012. In addition, the WTO ruled against the Canadian state of Ontario which had LCR schemes in place. It was not considered consistent with WTO commitments³³¹.

What are the current trade flows between EU-US?

In 2011, European companies accounted for 95 % of US imported wind-powered generating sets, trade worth roughly EUR 850 million. Denmark made up 55 % of trade, followed by Italy, Germany and Spain which generated the remaining 40 %. In 2012, EU-27 had a trade surplus from wind energy of around EUR 2.45 billion³³², compared to the US which has a significant trade deficit.

What are the potential impacts of the TTIP?

The European Wind Energy Association claims that the TTIP can be expected to remove LCR mechanisms, as it is a non-tariff measure. The ban on LCR will most likely become

³²⁸ EIA, 2014, U.S. wood pellet exports double in 2013 in response to growing European demand, 22 May 2014.

³²⁹ http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

³³⁰ <http://www.ictsd.org/downloads/2013/06/local-content-requirements-and-the-renewable-energy-industry-a-good-match.pdf>.

³³¹ <http://www.ewea.org/news/detail/2012/12/20/wto-rules-against-ontario-local-content-requirement-for-renewables/>.

³³² http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf.

systematically integrated in the agreement and become a prerequisite for other FTAs³³³. This would be beneficial for European wind power manufacturers.

ANNEX 2: ADDITIONAL INFORMATION

Non-tariff barriers: Paper and pulp industry

EU-US export:

- Variances in custom regulations and procedures between the EU Member States³³⁴.
- Import declaration of timber products.
- Federal divergence in standards.
- Container Security Initiative (CSI), posing delays at customs for sea cargo.

EU-US imports:

- Support schemes to local manufacturers, creating unequal competition.
- Eco-label schemes (voluntary).

Non-tariff measures notified by GATT/WTO members for non-agricultural products (share of NTMs by inventory category) NAMA, 2nd Inv. (2005)

I Government participation in trade and restrictive practices tolerated by	
A Government aids	1.7
B Countervailing duties	0
C Government procurement	0.7
D Restrictive practices tolerated by governments	4.3
E State trading, government monopoly practices, etc.	0.3
II Customs and administrative entry procedures	26.2
A Anti-dumping duties	2.3
B Valuation	5.3
C Customs classification	3.3
D Consular formalities and documentation	3
E Samples	0
F Rules of origin	2.6
G Customs formalities	9.6
III Technical barriers to trade	37.1
A General	8.9
B Technical regulations and standards	13.2
C Testing and certification arrangements	14.9

³³³ Personal communication with Vilma Radvilaitė and Pierre Tardieu, European Wind Energy Association (16th of September 2014)

³³⁴ Ecorys, *Non-tariff measures in EU-US trade and investment*, 2009.

IV Specific limitations	26.8
A Quantitative restrictions and import licensing	7
B Embargoes and other restrictions of similar effect	4
C Screen-time quotas and other mixing regulations	0.7
D Exchange control	1.3
E Discrimination resulting from bilateral agreements	0.7
F Discriminatory sourcing	1.7
G Export restraints	1
H Measures to regulate domestic prices	0.3
I Tariff quotas	1.3
J Export taxes	1
K Requirements concerning marking, labelling and packaging	6.3
L Other specific limitations	1.7
V Charges on import	1.7
A Prior import deposits	0
B Surcharges, port taxes, statistical taxes, etc.	1.3
C Discriminatory film taxes, use taxes, etc.	0.3
D Discriminatory credit restrictions	0
E Border tax adjustments	0
F Emergency action	0
VI Other	1.3
TOTAL	100

Source: WTO (2012).

Non-tariff measures reported by US and US exporters, (percentage of total survey responses) 2009³³⁵



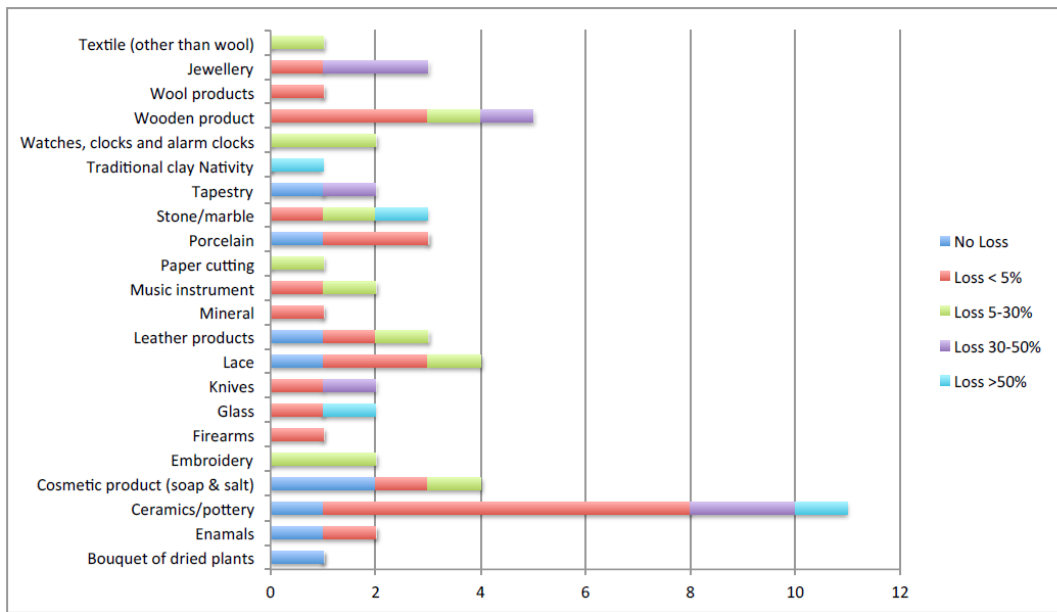
In a survey on 94 GI products outside of the food and beverages sectors, infringements were reported as a major problem for 57.4 % of them³³⁶. However, further analysis of 57 of these GI products shows that loss of revenues by GI infringements is small, i.e. on average below 5 % of the turnover (see figure). Losses presented more than 50 % of the turnover for 4 products, in the ceramics/pottery, glass, stone/marble and clay sectors. The study found a link between the degree of competition and the number of infringements. The strong reputation of a product's name often allows companies to enjoy a strong position on the regional and national market, often with little competition from very similar products. Competition comes mostly from competitors located outside of the region, producing either similar products or imitation products, abusing the GI name and deceiving consumers³³⁷. Following this line of reasoning, increased competition from US companies could increase pressure on GI products and results in more revenue losses.

³³⁵ http://www.wto.org/english/res_e/booksp_e/anrep_e/wtr12-2c_e.pdf.

³³⁶ Infringements or counterfeiting refer to products that copy products that benefit from an IP protection. Insight Consulting, REDD and OriGIn 2013.

³³⁷ Insight Consulting, REDD and OriGIn 2013.

Loss of revenues due to infringements (% of turnover), 2010³³⁸



Source: Insight Consulting, REDD and OriGIn 2013.

Trade secrets

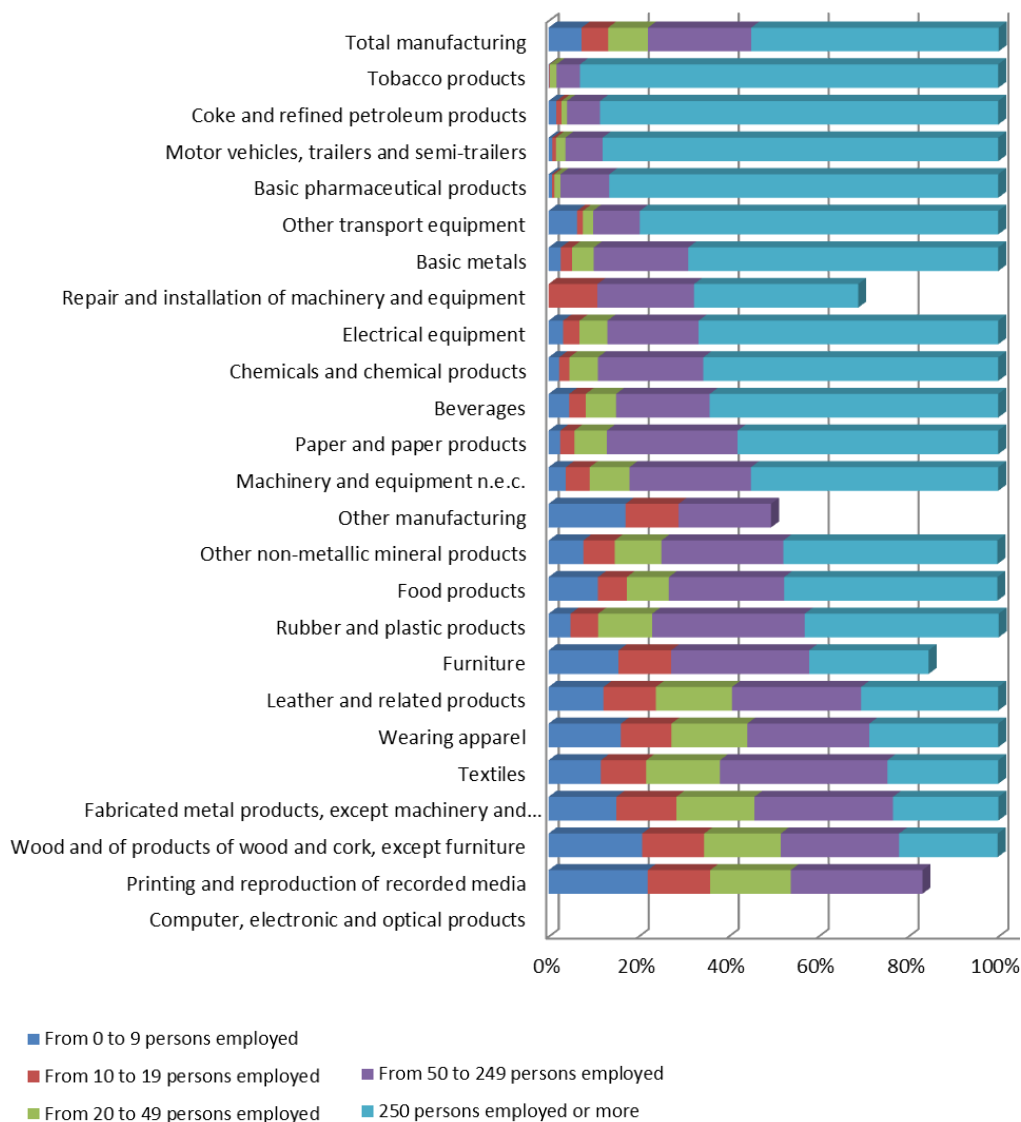
There are active discussions on trade secrets in IPR and in other areas of the TTIP negotiations. A trade secret is any type of valuable information, including a “formula, pattern, compilation, program device, method, technique, or process,” that derives economic value from not being general knowledge or readily ascertainable and is subject to reasonable efforts by the owner to maintain its secrecy³³⁹. Both the US and EU are concerned about increased instances of international trade secret misappropriation, in part caused by increased cybercrime. The Obama Administration’s strategy on mitigating the theft of US trade secrets (released in February 2013), includes seeking new criminal remedy provisions in US trade negotiations for theft of trade secrets³⁴⁰.

³³⁸ Insight Consulting, REDD and OriGIn 2013.

³³⁹ CRS 2014.

³⁴⁰ CRS 2014.

Value added at factor cost per enterprise size class in the EU, 2011³⁴¹



Source: Eurostat (note: there is data missing from the Eurostat database, but the figure remains relevant as it reveals the most dominant SME sectors).

NOTES

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

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