Implications of EU-U.S. free trade agreement on MEPS-policies

Teemu Hartikainen
Finnish Safety and Chemicals Agency (Tukes)
Kalevantie 2
FI-33100 Tampere
Finland
teemu.hartikainen@tukes.fi

Alan Meier
Energy Efficiency Center, University of California
Davis, CA 95616
USA
akmeier@ucdavis.edu

Ilkka Ruostetsaari
School of Management
FI-33014 University of Tampere
Finland
ilkka.ruostetsaari@uta.fi

Keywords

appliances, legislation, consumer information, Directive on Eco-design (EuP/ErP), domestic appliances, export, trade agreement

Abstract

The Transatlantic Trade and Investment Partnership (TTIP) will create the world's largest marketplace and is estimated to increase the trade between the EU and the U.S. by 50 %. The parties involved in the negotiations must still resolve many barriers, including differing regulations and standards for energy-related products. The procedures for policy development necessary to deal with these barriers must also be addressed in the negotiations, or shortly after the agreement comes into force. Minimum energy-efficiency performance standards (MEPS) for energy-related products are among the most important energy-saving policies, yet national strategies and premises strongly differ. The TTIP would require entirely new procedures for regulating product energy use, but as the negotiations are secret, there is considerable uncertainty if the outcome will have any impact on existing institutions and regulations. Enforcement authorities would need to harmonize their policies in order to ensure an even marketplace for economic operators. The establishment of a common product database for regulators and consumers would be a valuable first step. Policymakers should remain vigilant and ensure that the MEPS process remains transparent and higher levels of efficiency are pursued. The overall product energy efficiency gains can be significant and the amount of emissions avoided considerable, but only if the parties agree to harmonize at the more ambitious performance levels.

Introduction

Negotiations are presently underway between the EU and the USA to establish a free trade agreement, the Transatlantic Trade and Investment Partnership (TTIP). The prospective free trade zone would account for a half of the world's GDP and about a third of world trade (Francois, 2013). Last year considerable progress was made in negotiations to reach a Free Trade Agreement (FTA) between the USA and the EU, following President Obama's call for its completion in his State of the Union speech (Obama, 2013). This agreement has been pursued several times before, because of strong historical ties, similar goals in commercial and environmental policy, and the mutual belief that development of these relations would be beneficial for both parties. During the 1990s, several bilateral agreements were signed on specific sectors, such as the 1998 EU-US Agreement on Mutual Recognition of conformity assessment certificates. This agreement covered products in areas like pharmaceuticals, medical devices, telecom equipment, electromagnetic compatibility, electrical safety and recreational craft (Langhammer, 2002). Bilateral agreements were deferred with the rise of the WTO and the prospects for global trade agreement. But when the WTO Doha Development Round negotiations collapsed in 2008, renewed interest returned to establishing regional trade pacts around the world. Product standards, including definitions, test procedures, and also legal regulations dealing with energy efficiency, are at some level considered in all FTAs, while reducing tariffs and import quotas are their main target. For these reasons, the outcomes of trade agreements can have major impacts on energy efficiency policies. Moreover, these negotiations take place outside of the usual national (and global) forums that establish and implement energy efficiency policies.

The negotiations preceding a trade agreement generally follows a trajectory beginning with parties agreeing, that a reduction in trade barriers will result in overall lower costs to consumers in all participating economies. Typically a few key product groups occupy the greatest attention because they represent significant fractions of potential trade, or affect politically influential interest groups (or both). Governments give negotiators broad authority to make trade-offs among sensitive and unrelated products, with the ultimate goal of a single comprehensive package that all parties find attractive. Once the broad agreement on the major items is achieved, the details and other lower-priority issues are pushed down to sector-specific committees. The negotiations are usually kept secret until overall agreement is achieved.

Minimum Energy-efficiency Performance Standards (MEPS) are a set of mandatory requirements on a variety of products adopted by the EU through the Ecodesign-directive and by the USA through several legislative acts at both the federal and state level. MEPS are regarded as one of the most effective product policy tools to reduce energy consumption and greenhouse gas emissions (Waide, et. al., 2010), (Molenbroek, et. al. 2012). Generally speaking the European and American schemes have similar scope and approach; however the stringency of requirements varies appreciably and product coverage under the regulations is somewhat different. They also differ in administrative process and schedules for adoption and updating.

For the TTIP to deliver the expected economic benefits, a certain level of harmonization is needed to address variation in requirements (coverage, stringency, process, and schedules). An increasing number of manufacturers of energy-using products consider the marketplace for their products to be global, and they sell the same models everywhere. Thus the policies of the governments should follow such development, especially under free trade conditions. This paper identifies some of the benefits and challenges of harmonization, with special emphasis on MEPS.

WHAT ENERGY EFFICIENCY ASPECTS OF PRODUCTS CAN BE HARMONIZED

The product efficiency policy has three distinct building blocks: legal regulations, technical standards, and conformity assessment procedures. Legal regulation establishes characteristics or their related operating methods, including the applicable administrative provisions. It may also include terminology, symbols, packaging, marking, or labelling requirements as they apply to a product. In many jurisdictions, MEPS are at least partially included in the legal regulations. Technical standards are documents setting non-mandatory rules, guidelines or characteristics for measurement activities aimed to achieve an optimum outcome, and they are usually set by recognized standardization bodies. The conformity assessment procedures are used to determine whether a legal regulation or technical standard is fulfilled. Such procedures include, for example, testing, verification, monitoring, auditing, assurance of conformity, and, accreditation. In European EU-jargon, the concept of "standard" generally refers to test procedures, and "regulation" to MEPS-requirements, while Americans consider the MEPS-requirements as a standard. This difference in the use of terminology and context often causes confusion, and should be noted when harmonization is discussed.

Harmonization of energy efficiency policies and regulations can be achieved at five different levels:

a. product definitions
b. conformity assessment procedures
c. energy labelling
d. MEPS levels
e. incentive programs.[1]

Each successive level requires increasing international cooperation, but also results in loss of regional authority. International cooperation requires a "snapshot", or so-called market picture, that is, characterized information about the performance of products on the marketplace being available for policymakers. Most of the markets around the world where MEPS-requirements are in effect, also have an obligation for manufacturers or their representatives to list their products in a specific database. The EU and other economies that do not have such an obligation, lack a real-time market picture, and also have challenges effectively enforcing the MEPS-requirements. Thus, aspirations for a higher harmonization level would need such a mandatory product registration to be introduced in the EU as well.

There are both practical and technical limits to policy harmonization; for example, mains voltage and frequency (115 V/60 Hz in the USA, 230 V/50 Hz in Europe), plug types, radio communication frequencies, and some disposal/recycling matters involve larger, local infrastructure that cannot be changed. These constraints may prevent complete harmonization, but they typically have negligible impact on energy efficiency of products.

Other similar FTAs in force or still pending

Earlier FTAs illustrate some of the challenges for harmonization. Both the USA and the EU have signed several bilateral trade agreements with individual countries or regions over the years, for example, the USA and Korea signed KORUS in 2007, and the U.S.–Australian FTA was established in 2005 (USTR, 2014a). The EU has signed the Association Agreement with Chile in 2005, and the EU-South Africa Trade, Development and Co-operation Agreement (TDCA) has been in force since 2004 (European Commission, 2014a). However, these bilateral pacts are limited in scope and relatively small contributors to the economies of the EU and USA, thus they are not comparable to TTIP in terms of impacts on energy efficiency and product policy. The following three offer more similarity in this regard, and are therefore examined in greater detail. The focus here is to explore how the MEPS-related issues, as part of the technical barriers to trade, are considered in the trade agreements, and if there is a tendency towards converging them among the parties of these pacts. In addition to FTAs, a few other treaties are examined, namely WTO Agreement on Barriers to Trade, Environmental Goods Agreement (EGA), and Energy Star program. These are closely connected to MEPS harmonization in their respective fields. Summary of the MEPS-harmonization efforts in these FTAs and other treaties is given in Table 1 at the end of this chapter.

1. Programs where preferred products are promoted by rebates, tax reductions, subsidies, etc. Often the electricity service providers (utilities) are incorporated in the programs.

NAFTA

The North American Free Trade Agreement (NAFTA) was established in 1994 between the USA, Canada and Mexico. It eliminated tariffs and many non-tariff barriers, and has tripled the mutual trade and investments in the region. However, events like 9/11 and Great Recession diminished the impacts during the second decade of the pact such that most of the growth occurred before 2004 (The Economist, 2014).

Part III of NAFTA text, Technical Barriers to Trade, Chapter 9 attempts to balance members' rights to regulate the area of safety and health of people and the environment while aiming to minimize barriers to trade. The chapter deals with this dichotomy by affirming each member's sovereignty to regulate, while NAFTA further encourages its members to harmonize standards-related measures. Article 906 says that "the Parties shall, to the greatest extent practicable, make compatible their respective standards-related measures, so as to facilitate trade in a good or service between the Parties". In addition, when the exporting member demonstrates to the satisfaction of the importing member that its technical regulation adequately fulfils the importing member's legitimate objectives, Article 906 requires each importing member to treat the exporting member's technical regulation as equivalent (NAFTA, 1992, p. 195). Thus, *the concept of mutual recognition is actually built-in to the agreement*.

The environmental impacts have been a concern since the beginning of the pact. To address these fears, a special Commission for Environmental Cooperation (CEC) was created to oversee NAEEC, which is an environmental side agreement of NAFTA. CEC has held four symposia and funded 47 independent studies to examine the environmental impacts of NAFTA. While identifying no adverse impacts on the environment, CEC (2008) states that: "many dimensions of the trade and environment nexus, notably in the energy and services sectors, have yet to be documented and analyzed, thus making it impossible to draw an overall conclusion of the environmental impacts of NAFTA in North America". The strategic plan for 2010–2015 (CEC, 2010) addresses the need to engage national experts in mutual information sharing, and to initiate common energy efficiency programs, among others. The document even states that "benchmarking of efficiency standards to align national approaches" is an area where "the Parties could undertake work".

Since 2001, the North American Energy Working Group, which consists of officials from the highest energy authorities from respective countries, has explored possibilities to enhance cooperation and dialogue among the three countries especially with respect to closer cooperation on energy efficiency programs. So far, MEPS have only been harmonized for a few products: refrigerators/freezers, room air conditioners and 3-phase electric motors (NAEWG, 2007). With these three product groups, the harmonization extends to three of the earlier mentioned five levels: a) product definitions, b) conformity assessment procedures and d) MEPS levels. The report (NAEWG, 2007) suggests that MEPS and test procedures that could be harmonized in short/medium term are central A/C, fossil fuelled water heaters, washing machines and dishwashers, lamps, and smaller electric motors. But it remains unknown whether any steps have been taken to start the harmonization work in these product groups.

EFTA & EEA

The European Free Trade Association (EFTA) is closely connected to the European Economic Area (EEA), a single market where EU product legislation applies and goods move freely. In total, ten European countries have been members of EFTA over the years, but now only four are left due to others joining the EU. With the exception of Switzerland having bilateral agreements with the EU, the three other EFTA members (Iceland, Lichtenstein, and Norway) are obliged to implement all EU directives and regulations that are relevant to EEA. However, they can also contribute and influence the formation of new EEA-relevant legislation at an early stage, for instance through expert participation in specific committees chaired by the European Commission.

In practice, the three EFTA States belonging to EEA follow the product policy set by the EU and have the same energy efficiency measures in force as the EU Member States. Only Switzerland has the freedom to set different and stricter measures. An example was the Swiss requirement for clothes driers on the market to apply heat pump technology since January 2012 (only Energy Class A allowed, test standard is EN 61121:2005), thus enhancing their energy efficiency vastly compared to an average tumble dryer marketed in the EU Member States (Schweizerische Eidgenossenschaft, 2011).

Despite the opportunity to influence at an early stage of policymaking, the EFTA members are experiencing so-called "democracy deficit" in the process where the EU sets new policies (Eriksen, 2014). In trade policy, EFTA is a parallel organization to the EU, but they are connected via the EEA-agreement, which doesn't leave any decisive power for members outside the EU. The new MEPS are released as Commission Regulations, and become directly applicable throughout EEA without approval by national parliaments and without the possibility for national exceptions (Vahl, 2009). This structure is problematic for EFTA members, who would often have country-specific preferences for certain product types. A good example is water heaters in Norway, where the energy system is built upon utilizing large hot water tanks in buildings heated by abundant hydropower. The new Commission Regulation 814/2013 almost banned such tanks and, in the next revision of the regulation in 2018, will probably discuss more stringent requirements, without Norwegian representatives having the opportunity to sit at the negotiation tables.

With regard to harmonization, the first four levels are in effect with EFTA & EEA. Only incentive programmes which are almost always national programs, have not been harmonized.

FREE TRADE AGREEMENT OF THE ASIA-PACIFIC REGION (FTAAP)

The Asia-Pacific Economic Cooperation (APEC) is a forum for Pacific Rim member economies to facilitate economic growth, free trade, and investment in the Asia-Pacific region. The 21 members of APEC are shown on Figure 1. Since 1989, APEC has worked to reduce tariffs and trade barriers across the region, with the result of different free trade agreements in force among its members, and twice as many under negotiation. This complex situation is often referred to as a "spaghetti-bowl" (Brilliant, 2007). The most recent FTA was created between Japan and Australia in 2014. Japan has agreed to lower duties on Australian beef and raise the duty-free quota on cheese, while Australia will cut tariffs on Japanese electronics, cars and white goods (BBC, 2014).

So far, the most advanced proposal for a free trade area encompasses 12 of the APEC economies. These are involved in Trans-Pacific Partnership (TPP) negotiations, seeking to expand the Trans-Pacific Strategic Economic Partnership Agreement (P4), which is in force among Brunei, Chile, New Zealand, and Singapore (CEC, 2008). However, the ultimate goal is to create a Free Trade Agreement of the Asia-Pacific region (FTAAP) that would replace previous mutual agreements at least in overlapping sectors. The P4 agreement has not considered its environmental impacts to the extent of NAFTA, but it is clear that when TTP takes over P4, these issues will come to stage and analyses will start.

The text of the P4 agreement is somewhat similar to NAFTA when it comes to technical barriers to trade (TBT) discussed in chapter 8 of the P4-treaty (MFAT, 2005). Similar principles of mutual recognition apply in cases where regulations of two Parties are found equivalent, meaning that they fulfil legitimate objectives of both. The regulations don't have to be similar; it's their outcome that matter. For example, in the field of electrical safety, the regulations state that ultimately equipment sold on the market must be designed and manufactured such that they don't pose danger to anyone's health or property. That's the objective of the regulations, and then there are different ways of reaching that outcome, technical standards being the most obvious one. But even though the regulations of the Parties refer to different technical standards and/or procedures, they should be considered equivalent if the same level of protection is reached. An important note is in article 8.8., "A Party shall, upon the request of another Party, explain the reasons why it has not accepted a technical regulation of that Party as equivalent." On the basis of what is written above, such reasons may be difficult to determine the outcome of the regulations in question are actually the same. And finally, article 8.11 says: "A Party shall, on request, give favourable consideration to any sector-specific proposal another Party makes for further technical cooperation under this Chapter." The definition for "favourable consideration" is not given, but it *strongly implies that proposals for cooperation on TBT-issues cannot be neglected*.

In this context, it makes sense that at the 2013 APEC Senior Officials Meeting in Jakarta, Indonesia, the Committee on Trade and Investment endorsed the formation of a forum under the Sub-Committee on Standards and Conformance focused on global convergence of energy efficiency regulations for ICT products. The meeting re-affirmed the need for greater reform and alignment in regulatory approaches and international standards, as necessary steps to prevent unnecessary barriers to trade. Further, the following actions were also endorsed at the meeting:

- The new forum will begin by creating a formal plan that includes goals, timeline and other critical elements based on agreed upon outcomes. The energy efficiency experts group is to be led by regulators with participation from industry.
- Regulators were asked to review the IEC 62623 standard (test procedures for measuring energy efficiency of personal computers), determine its suitability for adoption and identify any barriers to implementation.
- Economies were asked to participate in coordinated market impact research studies to establish models and standardized categorization of systems.
- Economies were to report on applicability of the IEC E3 Program (Energy Efficiency, Energy Performance & Energy Consumption program by International Electrotechnical Commission).

The prospective FTAAP will most likely adopt the results of the above forum, if they prove successful, and endorse them among its member economies. What remains to be done is to clearly define the ultimate goal of the regulations, and setting

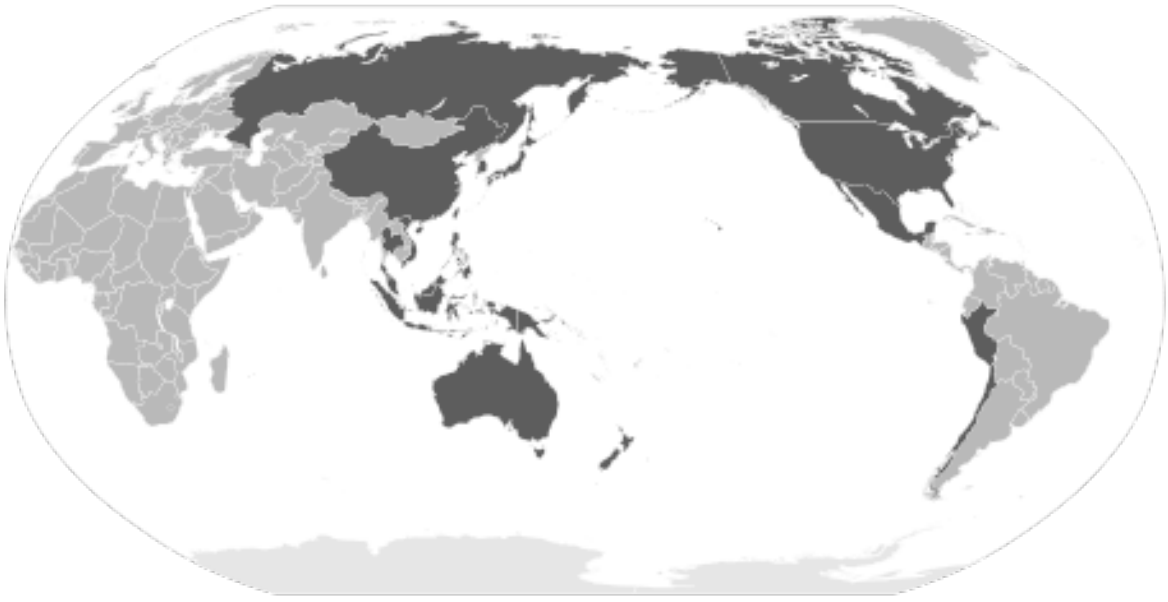

Figure 1. Prospective FTTAP consisting of APEC member economies shown on dark (Cflm001, 2009).

Table 1. Summary of MEPS harmonization efforts in earlier FTAs.

Agreement/Treaty	Level of MEPS-harmonization	Remarks
NAFTA	b) d)	Only three product groups involved.
EFTA & EEA	b) c) d)	Switzerland has special status.
FTTAP (P4)	–	Agreement not yet reached.
EGA	e)	Tax incentives for high-MEPS products.
Energy Star	b) c) d)	Office equipment only.

the policy levels for conformity assessment. So in conclusion, the harmonization efforts have not yet extended to any the five harmonization levels.

WTO AGREEMENT ON TECHNICAL BARRIERS TO TRADE

The TBT chapters of NAFTA and P4 are actually based on TBT Agreement of the WTO, aimed to ensure that regulatory measures do not constitute unnecessary barriers to trade among WTO members. The Agreement provides disciplines for the elaboration, application, notification and review of legal regulations, technical standards and conformity assessment procedures (Lesser, 2007). For example, every Ecodesign regulation is subject to such assessment by the WTO TBT Committee before it can be voted at the European Parliament.

However, Lesser (2007) concludes that "It is unfortunately difficult to gauge the overall progress achieved in the actual implementation of TBT liberalization, due to limited literature and reports available on the subject, particularly in the case of bilateral free trade agreements".

A so-called WTO+, more stringent TBT cooperation than what WTO requires, can be found in certain regional trade agreements. TBT-related trade liberalization can take several forms, including acceptance of legal regulations of the other Party as equivalent, alignment towards international standards and recognition of conformity assessment results through a broad range of mechanisms. Often provisions go beyond WTO rules by requiring Parties to provide an explanation for non-recognition of regulations and conformity assessment results or bodies.

ENVIRONMENTAL GOODS AGREEMENT (EGA)

Since July 2014, an interesting Environmental Goods Agreement (EGA) has been under negotiation between several WTO members, namely Australia; Canada; China; Costa Rica; the European Union; Hong Kong, China; Japan; Korea; New Zealand; Norway; Singapore; Switzerland; Chinese Taipei; and the United States. The EGA aims to liberalize trade in environmental goods, building on the APEC List of Environmental Goods, where 54 product groups are identified, and their tariffs will be lowered to 5 % or less before the end of 2015 among APEC members. (WTO, 2014).The fourth round of negotiations will take place on January 26–30, 2015, and will include discussions on products for cleaner and renewable energy and energy efficiency. It has been proposed (Väänänen, H., 2015) that the list of environmental goods in EGA should include also energy-efficient products for transfer, distribution and use of electricity. However, it would require revision of the Harmonized System of Custom Codes (HS), which is a classification used by customs authorities, as the energy-efficient products cannot usually be physically distinguished from their non-efficient counterparts. Certain properties of energy-efficiency should thus be included in the HS-system. Then the more expensive, yet much more efficient, environmental goods would benefit from lower tariffs and their market share would increase, and in turn the manufacturers would start to supply more of such models into the market. So when reached, this agreement would in a way provide an incentive program (level e) for energy-efficient products.

ENERGY STAR

Though not (yet) connected to free trade, the Energy Star, an international labelling program for energy-efficient office equipment, is worth mentioning in this context. It was first created by U.S. Environment Protection Agency (EPA) and the Department of Energy in 1992, and the program has been later adopted by the EU, Canada, Australia, New Zealand, Japan, and Taiwan. The idea is that products carrying an Energy Star mark consume 25 % less energy than required by the U.S. federal MEPS. While in the EU the program covers only office equipment (computers, displays, imaging equipment, UPS, and enterprise servers), in the U.S. it includes also domestic appliances, heating/cooling/ventilation, electronics, and lighting.

Products carrying an Energy Star mark have to be registered in a public database, and this is the case also in the EU, where the products are listed at eu-energystar.org web-page. For example, all notebook computers have on/off/sleep mode energy consumption listed as well as average annual energy use in kWh. The U.S. database is available at www.energystar.gov and there much more features are listed for a multiple number of products. Very interestingly, also the date is shown when a product was first available on the market, and in the case of notebooks also the countries where the products are sold is given. Thus the Energy Star database is exemplary for the harmonization under free trade conditions, making available the crucial information about products on the marketplace.

Trans-Atlantic FTA (TTIP)

The TTIP negotiations began in July 2013 and reached the eight round by February 2015. Negotiations are held in week-long cycles alternating between Brussels and Washington. Currently, the negotiators hope to conclude their work by the end of 2015. The importance of mutual trade for both economies can be seen from Table 2., while Figure 2 presents the geographic setting with NAFTA and EFTA as well. An economic assessment

Table 2. EU-US trade statistics in Goods and Services (European Commission, 2014b).

	Trade in Goods in billions of EUR			Trade in Services in billions of EUR		
Year	EU Imports from USA	EU Exports to USA	Balance	EU Imports from USA	EU Exports to USA	Balance
2010	173.0	242.3	69.3	133.8	137.3	3.5
2011	191.5	263.7	72.2	138.4	143.9	5.5
2012	205.2	292.2	87.0	145.6	156.8	11.2

of TTIP (Francois, 2013) states that an ambitious and comprehensive transatlantic FTA could bring €119 billion economic gains for EU, and €95 billion for the USA, while global income would increase by almost €100 billion.

The European Commission (2014c) has released several position papers for the TTIP negotiations, and the U.S. objectives were released by USTR (2014b). Most notable of the EU papers in the context of this article is Technical Barriers to Trade (TBT) - position paper (European Commission 2013a), though there is also the Trade and Sustainable Development paper (European Commission, 2013b) stating that the aim is to "promote trade of climate-friendly products and have active policy of review the effects of the Agreement on sustainable development objectives". In early 2015, the EU Commission (2015) published the negotiation texts and also the textual proposals for all chapters of the agreement.

The TBT-paper naturally considers tackling provisions aimed at promoting greater regulatory compatibility and transparency in individual sectors, e.g. the conformity assessment and standards development processes. But the EU Commission is concerned about possible hindrances to international trade with respect to the partners, while recognizing that the existing voluntary instruments of transatlantic co-operation should not be compromised. The paper also stresses that one side should not impose its system on the other, nor treat its partner more favourably than its own side. The new 2015 version of TBT-factsheet mentions energy efficiency of domestic appliances in particular, and identifies conformity assessment procedures (level b) as important and possible subject of harmonization.

The U.S. objectives seek to eliminate all tariffs and duties in trade of consumer products, and obtain improved transparency in administration of trade regimes. High level of environmental protection and effective enforcement of environmental laws is also in their interests. The most important sentence in this context says: "[W]e seek greater compatibility of U.S. and EU regulations and related standards development processes, with the objective of reducing costs associated with unnecessary regulatory differences and facilitating trade, inter alia by promoting transparency in the development and implementation of regulations and good regulatory practices, establishing mechanisms for future progress, and pursuing regulatory cooperation initiatives where appropriate", and continues, "We seek to build on key principles and disciplines of the WTO Agreement on Technical Barriers to Trade (TBT)". Now, this means that the TBT-provisions in NAFTA- and P4-agreements, pursuing mutual recognition and harmonization efforts, are likely to become the basis for respective chapters in TTIP agreement.

A key issue is to understand the functioning of the EU and U.S. internal markets, that is, the conditions under which products can be lawfully placed on the market in EU Member States and U.S. States, and how this applies to the common marketplace that TTIP would create. In case of energy-related products, the EU relies on manufacturer's self-declaration of compliance, while the U.S. requires third-party certification and listing the products on a public database. Moreover, some U.S. States, especially California[2] , have their own MEPS in force with requirement for manufacturers to list products to be sold in California on a specific database. Thus the framework conditions for market access are very different presently, and many exporters, especially small and medium sized enterprises (SME) on both sides of the Atlantic, find the situation quite confusing.

This is confirmed by a recent report by USITC (2014), compiling the results of 28 roundtable discussions with U.S. businesses exporting to EU with trade volume of $76 billion in 2011: "Many SMEs reported that EU technical regulations and other trade barriers limit their ability to export, and they expressed concern that standards-related measures may pose a greater burden on SMEs seeking to export to the EU than on larger companies. While complying with standards, technical regulations, and conformity assessment procedures can be costly for larger firms, it is potentially prohibitive for SMEs because many costs are fixed". And moreover, "those SMEs producing machinery, electronic, transportation, and other goods cited a lack of harmonized international standards and mutual recognition for conformity assessment, as well as problems complying with technical regulations and conformity assessment procedures.

The text proposed by the EU Commission (2015) for TBT-chapter of the Agreement is very promising in terms of future collaboration and harmonization of regulatory framework. Whether the final text contains the same elements, is yet to be seen.

Discussion and policy implications

Should MEPS-policy even be covered in TTIP? Bollyky and Bradford (2013) suggest that the TTIP negotiations should focus on sectors where transatlantic goals of trade and regulation overlap: pharmaceuticals, agricultural products, and financial services. This would ensure, in their words, that the

2. Californian MEPS preceded U.S. federal regulations, and while pre-empted on several product groups, they still cover a variety of energy-related products in lighting, heating, and cooling appliance sectors. California Energy Commission also established the first database in the USA, which paved the way for industry-specific databases, where companies voluntarily disclose product data.

Figure 2. Negotiators of TTIP are shown on dark,while lighter indicates NAFTA countries in North America (Canada and Mexico) and EFTA in Europé (Iceland, Lichtenstein, Norway, and Switzerland). (Fou, 2013.)

United States and Europe remain "standard makers, rather than standard takers," in the global economy, subsequently ensuring that producers worldwide continue to gravitate toward joint US-EU standards. Clearly, energy-related products would also fit in this group, as we are arguing here in this paper. Overlap in MEPS is as visible as it is in pharmaceuticals, and even more so than in agricultural products, where genetically manipulated organisms (GMO) in U.S. food production is a barrier to trade with the EU, where GMO is strongly opposed (Hontz-Ward, 2013).

In the future, making of common regulations should be a priority on sectors where new legislation is needed, but also in cases when current regulations are being reviewed. Ultimately, global harmonization of MEPS-requirements should be pursued whenever possible. Good examples exist on sectors such as marine safety equipment, air traffic regulations (IATA, 2013), and safety standards of electric vehicles. Past agreements in these sectors have demonstrated that instead of finding the least common denominator for harmonization, there has been a race to the top, that is, the highest level of safety is pursued when regulations are reviewed and harmonized. The scale of potential energy savings attained via harmonization to more ambitious performance levels is so significant that it becomes an environmental safety issue due to the large number of avoided new power plants[3], in addition to an energy security issue. Thus the starting point for harmonization should be the highest efficiency level of the respective regulations, and not the lowest.

How should harmonization efforts begin? The officials responsible of policy development and those of enforcement in all jurisdictions should learn from established best practices and they should be provided with platform of cooperation and information sharing. This is already taking place between the EU Member State authorities, but with TTIP it becomes essential that information is shared over the Atlantic as well. The harmonization should reach enforcement methods in addition to policy development and reviews.

One of the earliest requirements should be a common database listing the products offered legally for sale in the trans-Atlantic marketplace. Without such a database, it is impossible to determine product sizes, features, and energy efficiency ranges that should, in a next step, be harmonized and regulated. That's the best way to serve the desired transparency objectives, and establish the required market data for future policymaking. Such a database already exists in the USA and many other major economies, but does not yet exist in the EU. For these reasons the establishment of a comparable product database should be a high priority. One approach would be to by-pass an EU-wide database and make it trans-Atlantic from the start. Because it would be a new burden for the economic operators to upload data about the products they are placing on the trans-Atlantic market, the bureaucracy should be minimized by utilizing a single, easy-to-use database, common for the EU

3. Can be measured explicitly in Rosenfeld-units, see Glossary.

and the USA. A very good model is the Energy Star database. Thinking further, there should also be step-by-step instructions for economic operators on what conditions their products gain access to the market. Once the procedures have been established, the enforcement authorities could be responsible for keeping the database updated and making sure the system contains latest information about product requirements. Language of the database should be simplified English, for many European authorities do not use English as working language. Instructions and on-line support should be available in every official EU language.

Conclusions

The overall economic benefits of the TTIP for the EU and the USA may be positive, but its impact on product energy efficiency is at best unclear. The continuing negotiations are opaque so it's not clear if the TTIP will lead to entirely new procedures for regulating MEPS. At this time, it is impossible to predict which product groups will be covered, and how they will be regulated. Will the compromises lead to selection of the highest efficiencies or the lowest common denominators? If past agreements are any guide, these issues will not be resolved in the run-up to the agreement and an extended period of regulatory uncertainty will prevail. This uncertainly could eventually undermine other energy-saving policies and anticipated reductions in carbon emissions.

One important requisite of a harmonized market is a common database for energy-related products listing their manufacturers, models, and energy consumption data. Such a database is already available in the USA but not in the EU. Thus, a trans-Atlantic database could be a valuable outcome from the trade agreement.

After the TTIP has been in force for five to seven years, a thorough review should be conducted of the harmonization efforts, and an impact analysis performed for realized energy savings and emissions reduction. (Sadly, these kinds of reviews have not been undertaken for earlier FTAs.) Only then can a conclusion be made whether MEPS—and national energy-saving policies—have benefitted from the trans-Atlantic free trade agreement.

Glossary

APEC	Asia-Pacific Economic Cooperation, a forum for 21 Pacific Rim economies on trade issues.
BBC	British Broadcasting Corporation.
CEC	Commission for Environmental Cooperation of NAFTA.
DOE	United States Department of Energy, a branch of US Government, sets the federal MEPS.
EcoDesign	is the European directive for setting MEPS on energy-related products.
EEA	European Economic Area, consisting of European Union member countries plus Iceland, Lichtenstein, and Norway, is a Single Market where product-related European directives apply.
EFTA	European Free Trade Association, a trade block between Iceland, Lichtenstein, Norway, and Switzerland.
Energy-related products	Energy-related products are goods that have impact on energy consumption during their use. This includes all energy-using appliances, but also products indirectly linked to energy consumption, for example, windows and water faucets. However, means of transport for persons and goods are usually excluded.
EU	European Union, a supranational union of European countries with the European Commission as its executive body.
FTA	Free Trade Agreement, a trade block between parties, who have agreed to reduce trade barriers by eliminating tariffs, import quotas, and preferences on goods and services traded between them.
FTTAP	Free Trade Agreement of the Asia-Pacific region, a prospective trade block between Pacific Rim countries. Not yet in existence, see P4, and TPP.
GDP	Gross Domestic Product, the annual market value of all officially recognized final goods and services produced within a country or economic area.
GMO	Genetically Modified Organism, has its genetic material been altered using genetic engineering techniques to resist pest and herbicides, and to increase its nutritional value.
IEC	International Electrotechnical Commission, sets the standards for most electrical products.
KORUS	Free trade agreement between the United States and Republic of Korea.
MEPS	Minimum Energy-efficiency Performance Standards, a set of mandatory requirements on energy consumption of consumer appliances.
MFAT	New Zealand Ministry of Foreign Affairs and Trade.
NAFTA	North American Free Trade Agreement, signed in 1994 between Canada, Mexico, and the United States.
NAEEC	North American Agreement On Environmental Cooperation, a side agreement of NAFTA concentrating on environmental issues linked to NAFTA.
NAEWG	North American Energy Working Group.
OECD	Organization for Economic Cooperation and Development, often considered to encompass the economically developed countries in Europe, North America, and Pacific Rim.
P4	Trans-Pacific Strategic Economic Partnership Agreement between Brunei, Chile, New Zealand, and Singapore.
Rosenfeld	A proposed unit for annual 3 TWh electricity savings from a 500 MW coal-fired power

	plant, equivalent to 3 megatons of CO_2-emissions per year (Koomey J., et al., 2010).
SME	Small and Medium-Sized Enterprises, companies employing 10–250 workers.
SOM 1	APEC Senior Officials Meeting number 1, in Jakarta, Indonesia, 2013.
TBT	Technical Barriers to Trade, a typical part of free trade agreements where national technical regulations and conformity assessments are viewed as barriers to free trade.
TDCA	Trade, Development, and Co-operation Agreement, signed between the European Union and South Africa.
TPP	Trans-Pacific Partnership, seeks to expand P4 to encompass 12 of Pacific Rim countries, who are members of APEC.
TTIP	Transatlantic Trade and Investment Partnership, a free trade agreement currently in negotiations between the European Union and the United States.
USITC	United States International Trade Commission.
USTR	United States Trade Representative.
WTO	World Trade Organization

References

BBC 2014. Japan and Australia agree trade deal, BBC News, 8 April 2014. http://www.bbc.com/news/business-26917871.

Bollyky, T., Bradford, A., 2013. "Getting to Yes on Transatlantic Trade". 10 July 2013, Foreign Affairs. http://www.foreignaffairs.com/articles/139569/thomas-j-bollyky-and-anu-bradford/getting-to-yes-on-transatlantic-trade.

Brilliant, M., 2007. A Free Trade Area of the Asia-Pacific: An Idea with Merit, but Is It Feasible? Brookings East Asia Commentary | Number 11 of 69. http://www.brookings.edu/research/opinions/2007/09/northeastasia-brilliant#.

CEC, 2008. Environmental Assessment of NAFTA: Lessons Learned from CEC's Trade and Environment Symposia, Secretariat of the Commission for Environmental Co-operation. http://www.cec.org/Storage/61/5389_08-24a-Symposium-Lessons-fin_en.pdf

CEC, 2010. Strategic Plan of the Commission for Environmental Cooperation 2010–2015. http://www.cec.org/Storage/58/10115_Strategic_plan_2011_en.pdf.

Cflm001, 2009. Member nations of the Asia-Pacific Economic Cooperation. http://commons.wikimedia.org/wiki/File:Asia-Pacific_Economic_Cooperation_nations.svg.

Eriksen, E. O., 2014. Jubileum med bismak, 3 March 2014, in Dagbladet (Norwegian newspaper) http://www.dagbladet.no/2014/03/03/kultur/meninger/hovedkronikk/debattinnlegg/grunnlovsjubileet/32112945/.

European Commission, 2013a. EU-US Transatlantic trade and investment partnership – Techical Barriers to Trade – initial EU position paper http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151627.pdf.

European Commission, 2013b. EU-US Transatlantic trade and investment partnership – Trade and Sustainable Development – initial EU position paper http://trade.ec.europa.eu/doclib/docs/2013/july/tradoc_151626.pdf.

European Commission, 2014a. List of free trade agreements of the European Union. http://ec.europa.eu/enterprise/policies/international/facilitating-trade/free-trade/.

European Commission, 2014b. EU Trade Policy with the United States. http://ec.europa.eu/trade/policy/countries-and-regions/countries/united-states/.

European Commission, 2014c. Documents related to TTIP negotiations. http://ec.europa.eu/trade/policy/in-focus/ttip/resources/#documents.

European Commission, 2015. EU negotiating texts, chapter by chapter. http://trade.ec.europa.eu/doclib/press/index.cfm?id=1230.

Francois, J., 2013. Reducing Transatlantic Barriers to Trade and Investment – An Economic Assessment, Centre for Economic Policy Research, London. http://trade.ec.europa.eu/doclib/html/150737.htm.

Fou, M., 2013. Projections of the trans-Atlantic free trade area. http://commons.wikimedia.org/wiki/File:Transatlantic_Free_Trade_Area.svg.

Economist, 2014. NAFTA turns 20, discussion between editors Oliver Morton & Andrew Palmer, digital Edition, 2 Jan 2014.

Hontz-Ward, A., 2013. In Europe Debate Intensifies Over GMO Food Imports from US, Voice of America, 24 Oct 2013. http://www.voanews.com/content/debate-intensifies-over-gmo-food-imports-from-us/1775917.html.

IATA, 2013. News Brief: Safety, Efficiency and Harmonization Key Priorities for Sustainable Growth, 3 May 2013. http://www.iata.org/pressroom/pr/Pages/2013-05-03-02.aspx.

Koomey, J., et al., 2010. Defining a standard metric for electricity savings, Environmental Research Letters, Vol. 5, 014017. doi:10.1088/1748-9326/5/1/014017.

Langhammer, R. J., Piazolo, D., Siebert, H., 2002. Assessing proposals for a transatlantic free trade area, Aussenwirtschaft, ISSN 0004-8216, Vol. 57, Iss. 2, pp. 161–185. Available at: http://hdl.handle.net/10419/2769.

Lesser, C., 2007. Working Party of the OECD Trade Committee, Do Bilateral and Regional Approaches for Reducing Technical Barriers to Trade Converge towards the Multilateral Trading System?, OECD Trade Policy Working Paper No. 58, TAD/TC/WP(2007)12/FINAL, © OECD, Paris. www.oecd.org/tad/ntm/39711550.pdf.

MFAT, 2005. Trans-Pacific Strategic Economic Partnership Agreement, Wellington, New Zealand. http://www.mfat.govt.nz/downloads/trade-agreement/transpacific/main-agreement.pdf.

Molenbroek, E., Cuijpers, M., Blok, K., 2012. Economic Benefits of the EU Ecodesign directive, ECOFYS.

Netherlands B.V., Amsterdam. http://www.ecofys.com/en/publication/economic-benefits-of-the-eu-ecodesign-directive/.

NAEWG, 2007. The North American Energy Working Group, Standby Power Consumption. Workshop September 25-26, 2007, Powerpoint presentation. http://www.conae.gob.mx/work/sites/CONAE/resources/LocalContent/5343/1/JohnCockburn.pdf.

NAFTA, 1992. North American Free Trade Agreement. www.worldtradelaw.net/fta/agreements/nafta.pdf

Obama, B., 2013. State of the Union Address, Washington, D.C., February 12, 2013 http://www.whitehouse.gov/the-press-office/2013/02/12/president-barack-obamas-state-union-address.

Schweizerische Eidgenossenschaft, 2011. Faktenblatt: Elektrogerätevorschriften per 1 January 2012, Bern. http://www.news.admin.ch/NSBSubscriber/message/attachments/24582.pdf.

USITC, 2014. United States International Trade Commission, Trade Barriers That U.S. Small and Medium-Sized Enterprises Perceive As Affecting Exports to the European Union, Investigation No. 332-541, USITC Publication 4455. http://www.usitc.gov/publications/332/pub4455.pdf.

USTR, 2014a. List of free trade agreements signed by the USA. http://www.ustr.gov/trade-agreements/free-trade-agreements/.

USTR 2014b. Press release of US objectives for TTIP negotiations. http://www.ustr.gov/about-us/press-office/press-releases/2014/March/US-Objectives-US-Benefits-In-the-TTIP-a-Detailed-View.

Vahl, M., 2009. Decision shaping in the European Economic Area, Brussels. http://www.efta.int/sites/default/files/publications/bulletins/eeadecisionshaping-bulletin.pdf.

Väänänen, H., 2015. Energiatehokkaat tuotteet ansaitsevat alemmat tullit, 16 January 2015 in Helsingin Sanomat (Finnish newspaper), page A 5.

Waide, P., Scholand, M., Saheb, Y., Harrington, L., 2010. What is to be expected and gained from international harmonization of equipment energy efficiency requirements?, Proceedings in the ACEEE Summer Study on Energy Efficiency in Buildings, 8-376-8-389. http://aceee.org/files/proceedings/2010/data/papers/2166.pdf.

WTO, 2014. Joint Statement Regarding the Launch of the Environmental Goods Agreement Negotiations. 8 July 2014 Geneva, Switzerland. http://eeas.europa.eu/delegations/wto/documents/press_corner/final_joint_statement_green_goods_8_july_2014.pdf

Acknowledgements

The work carried out for this paper was performed at the Energy Efficiency Center of University of California, Davis, USA. The corresponding author would like to thank Professor Nicole Biggart and Executive Director Ben Finkelor for providing excellent working facilities. Also special thanks to Ms. Kirsti Hind Fagerlund of Norwegian Water Resources and Energy Directorate for providing insight into EFTA-EEA-relations.