WORLD ENERGY COUNCIL

World Energy Perspectives

Rules of trade and investment | 2016

NON-TARIFF MEASURES: NEXT STEPS FOR CATALYSING THE LOW-CARBON ECONOMY

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ABOUT THE WORLD ENERGY PERSPECTIVES – NON-TARIFF MEASURES: NEXT STEPS FOR CATALYSING THE LOW-CARBON ECONOMY

The World Energy Perspective on Non-tariff Measures is the second report in a series looking at how an open global trade and investment regime concerning energy and environmental goods and services can foster the transition to a low-carbon economy.

Building on the previous report on tariff barriers to environmental goods, this report highlights twelve significant non-tariff measures (NTMs) directly affecting the energy industry and investments in this sector. The World Energy Council has identified that these barriers greatly impact countries' trilemma performance, the triple challenge of achieving secure, affordable and environmentally sustainable energy systems. Through this work, the Council seeks to inform policymakers as to what extent countries should address non-tariff measures to improve trade conditions, and eliminate unnecessary additional costs to trade, ultimately fostering national economic development.

Reducing and eliminating trade barriers is key to catalysing the low-carbon economy and enabling countries to develop sustainable energy systems, with positive impacts on all three aspects of the energy trilemma through, for instance, reduced cost of technology and energy itself, enhanced energy security and transition to a low-carbon energy system.

FOREWORD

At the start of 2015, the World Energy Council published a paper on “Catalysing the Low Carbon Economy.” In that piece, the World Energy Council’s knowledge network on trade and investment rules looked at the impact of tariffs (customs duties) on environmentally-friendly energy products, created a list of such products, and called for the elimination of those tariffs. That report concluded that the reduction of trade barriers can make a positive contribution to all aspects of the energy trilemma, stating:

> *“The World Energy Council believes, first and foremost, that eliminating government imposed barriers to trade in environmental goods and services, thereby reducing their cost and spurring their utilization, is a central means of contributing to international GHG reduction objectives, increasing energy access in developing and emerging economies, reducing the cost of technology and energy itself, and enhancing energy security.”*

That report was focused on tariffs but also pointed out that non-tariff trade measures can have a substantial impact on energy-related trade. However, the 2015 paper concluded that it is important for governments to achieve practical, short term results in a binding agreement on tariffs before turning to other trade matters impacting energy related environmental goods.

Now a group of like-minded nations have made great progress toward an agreement among them to eliminate their tariffs on environmental goods. While important further work remains to be done on that agreement, this is an appropriate time to begin planning for a next phase of trade negotiations in order to carry forward the momentum from a plurilateral tariff agreement.

Anticipating this possibility, and recognising that policymakers can benefit from advice from independent industry experts, the World Energy Council staff and members of the knowledge network have spent the last eighteen months identifying and analysing non-tariff measures in the energy sector. This report is the outcome of that work program. It provides a rationale for extending trade talks into the sometimes complex area of non-tariff measures, categorises non-tariff measures in energy-related environmental goods, and provides specific examples of those measures.

The World Energy Council is committed to continuing its work on trade and energy issues. We anticipate that this could include further analysis of non-tariff measures in additional areas. It is also important to note that energy-related services and investment – along with the addition of more countries to the process – remain as areas of potential expansion of the environmental goods trade liberalisation agenda. These represent promising areas for future Council research, analysis and recommendations.

I would like to thank the many members of the knowledge network, particularly Edgar Ubbelohde, Stefan Ulreich, and Andrew Stephens, who contributed to this report and to extend particular appreciation to Larry Herman, who inspired the launch of this network and continues to be a major contributor to its work. Finally, this report would not have been possible without the dedicated efforts of members of the Council's staff. Sandra Winkler, Alessandra De Zottis and Diletta Giuliani conducted research and served as principal drafters of the report and Tania Baumann contributed her expertise to editing the final product. It is a pleasure to work with all of these dedicated individuals.

Timothy J. Richards
Executive Chair, Rules of Trade and Investment

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Environmental goods represent a trade market of approximately US$1 trillion annually.[1] Reducing barriers to trade and investment would tangibly support cost effectiveness and efficient decarbonisation of the energy sector, leading to more sustainable and accessible energy systems. Understanding and tackling non-tariff measures (NTMs) that impact on the low-carbon energy sector should be a priority in a country's efforts to successfully address its energy trilemma – the links between energy security, energy equity, and environmental sustainability. These three dimensions can contribute to the prosperity and competitiveness of individual countries.

As a trade barrier, NTMs frequently relate to customs procedures and import requirements, technical standards and other regulations that impede the flow of goods and services. These are estimated to have twice the impact on trade than tariff barriers,[2] although they are generally less understood and more difficult to address and remove.

With energy mostly neglected in conventional trade policy in the World Trade Organization (WTO) as well as in bilateral free trade agreements, this report aims to support policymakers in building an NTM-related agenda. The World Energy Council urges countries and the WTO to assess whether initiatives to phase out NTMs on products covered in the current plurilateral environmental goods tariff negotiations would be beneficial. While barriers to trade and investment in energy goods and services are starting to be addressed, the process of integrating the energy dimension to trade policy is still in its infancy. As the world's largest economies start to use private capital to finance low-carbon technologies, the elimination of tariffs and NTMs can be an equally powerful economic force.

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[1] United Nations Environment Programme, 2013: Green economy and trade trends, challenges and opportunities
[2] World Trade Organization (WTO), 2012: World Trade report: A closer look at non-tariff measures in the 21st century

KEY FINDINGS

The report highlights 12 significant NTMs directly affecting investments in the energy industry:

1. **Local content requirements** should be carefully structured, otherwise they can hamper local and foreign investments in research and development, influence technology choice, limit low-carbon technology transfer and inhibit or delay energy projects due to a lack of local capabilities.

2. **Customs procedures** are the backbone of international trade. Their transparent and efficient application helps to avoid arbitrary and unnecessarily burdensome formalities in trading energy and environmental goods.

3. **Conformity assessment procedures and technical regulations** inhibit trade when they are duplicative and discriminate between countries, impeding market access for small- and medium-sized enterprises and start-ups.

4. **Government procurement practices** inhibit competition when they favour domestic suppliers, for instance by including preferential qualification conditions in the bidding process, or imposing burdensome administrative compliance.

5. **Taxation laws** can inhibit trade if they discriminate against foreign investments or imported goods, for example, by setting preferential tax rebates for domestic trade or posing non-transparent and onerous tax reporting obligations.

6. **Subsidies for energy technologies** should be well designed, or they could result in the inefficient and unsustainable use of subsidised energy. Subsidies that inhibit trade could hamper economic growth, preventing efficient allocation of resources and production specialisation.

7. **Investment restrictions** are often introduced to protect local industry and resource ownership. Yet, they can unintentionally prevent resources, expertise and available technologies being exploited to their full potential and can have a negative impact on foreign direct investment.

8. **Administrative licensing**, when leading to non-transparent, fragmented and lengthy permit procedures, can deter investments and result in unforeseen legal expenses.

9. **Process and production methods** can hamper international trade in the attempt to control, facilitate or prevent the import of energy goods. Although restrictions on goods produced by specific methods often aim to have a positive impact on environmental sustainability, they might negatively affect energy security.

10. **Intellectual property protection**, if lacking or particularly weak, can be a major concern in developing energy goods and services due to widespread patent and trademark counterfeiting, and piracy of energy system software.

11. **Complexity of legal systems** can affect the enforceability of contracts and credit recovery, impacting investments and the exchange of energy goods and services.

12. **Export prohibitions and limitations** reduce the availability of energy products, forcing importing countries to face higher international prices.

IMPLICATIONS FOR THE ENERGY SECTOR

Reducing and eliminating trade barriers is key to catalysing the low-carbon economy and enabling countries to develop sustainable energy systems. It will have positive impacts on the energy trilemma – for example through reduced energy and technology costs, enhanced energy security, and transition to a low-carbon energy system.

Rather than introducing new measures, governments could find solutions in adjusting existing measures to spur competition, guaranteeing transparency, and correct failures in the trade system, such as resolving inefficiencies and discriminatory or duplicative measures.

The Council concludes that reducing NTMs related to low-carbon energy and environmental goods should be prioritised.

TACKLING NON-TARIFF MEASURES

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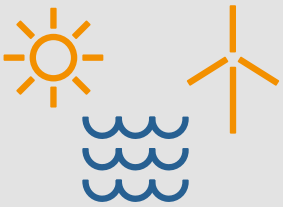
THE FACTS

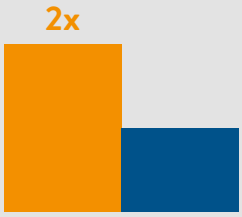
80 – 90%

UNCTAD estimates that 80% to 90% of all trade is affected by non-tariff measures.



$1 trillion

The global trade in environmental goods is worth $1 trillion per year.



WTO estimates that non-tariff measures have twice the impact of tariffs on global trade.

12 NON-TARIFF MEASURES AFFECTING INVESTMENT IN ENERGY

1 LOCAL CONTENT REQUIREMENTS

Demanding that businesses use local products and services hampers investment in R&D and limits transfers of low-carbon technology.

2 CUSTOMS PROCEDURES

These can be arbitrary and slow. Pre-shipment inspections (PSIs), for example, are a major inefficiency in the trade in energy and environmental goods.

3 CONFORMITY ASSESSMENT AND TECHNICAL REGULATIONS

Technical issues inhibit trade when they discriminate against certain countries, or operate in favour of larger corporations.

4 GOVERNMENT PROCUREMENT

Governments can restrict competition in bidding processes – for example, by favouring domestic suppliers, or imposing unequal compliance requirements.

5 TAX LAWS

Tax systems can distort trade by discriminating against foreign imports, or foreign investment in the energy sector. They can impose burdensome administrative and reporting obligations.

6 SUBSIDIES

Subsidies need to be carefully designed, so that resources are wisely allocated, and inefficient, unsustainable forms of energy are not encouraged.

7 INVESTMENT RESTRICTIONS

These can protect local industry and ownership, but they can also risk isolating a market from international expertise and cutting-edge technology. Foreign direct investment can also be reduced.

8 ADMINISTRATIVE LICENSING

If the process of obtaining permits for the energy sector becomes costly, time-consuming and opaque, it can deter investment.

9 PROCESS AND PRODUCTION METHODS

Attempts to control the trade in energy goods – for example, by discriminating between similar products on the basis of how they were produced or recovered – can have a negative impact on energy security.

10 INTELLECTUAL PROPERTY (IP) PROTECTION

R&D is a less attractive proposition in places where IP controls are weak. Counterfeiting, infringement and piracy need to be controlled to encourage innovation.

11 LEGAL SYSTEMS

Where legal systems are overly complex or opaque, trade, investment and finance are directly affected. Contracts and credit recovery, for example, need to be readily enforceable.

12 EXPORT CONTROLS

Prohibitions and limitations on exports reduce the availability of goods, meaning artificially inflated prices for energy-related products.

RECOMMENDATIONS

- For countries to address their energy trilemma and kick-start a low-carbon economy, they must understand and tackle non-tariff measures.
- If non-tariff measures are removed, investment flows and finance for energy-related goods will improve, particularly for low-carbon technologies.

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INTRODUCTION

In the transition to a low-carbon economy, an open global trade and investment regime is essential to develop energy systems that are secure, affordable and environmentally sustainable.

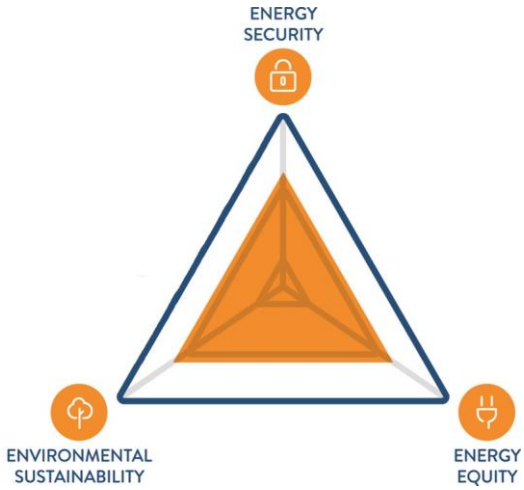
Trade and investment of energy and environmental goods and services should be addressed through the prism of balancing this 'energy trilemma' (see Figure 1).

FIGURE 1: THE WORLD ENERGY TRILEMMA

Energy security: Effective management of primary energy supply from domestic and external sources, reliability of energy infrastructure, and ability of energy providers to meet current and future demand.

Energy equity: Accessibility and affordability of energy supply across the population.

Environmental sustainability: Encompasses achievement of supply- and demand-side energy efficiencies and development of energy supply from renewable and other low-carbon sources.



Source: World Energy Council, 2013, Time to get real – the agenda for change

Balancing the 'energy trilemma' is not possible without robust and enabling policy frameworks that encourage investment, innovation and technology uptake. In this sense, barriers to trade and investment of energy and environmental goods and services have had significant impact on a country's energy trilemma performance as they can add unnecessary costs to trade, with consequences on the energy equity dimension of accessibility and affordability of energy. Repercussions on the other two dimensions can then arise: for instance, expensive low-carbon technologies could hinder progress of decarbonisation where their market uptake is limited and, simultaneously, might affect a country's energy security level because of a limited energy mix.

The Council's World Energy Issues Monitor, has highlighted that energy leaders from several developing countries rank trade barriers as critical uncertainties.[3] Other world regions also perceive trade barriers or related elements such as energy subsidies, as requiring urgent attention. Given the diverse economic, political and geographical realities included in the Issues Monitor, it emerges that every country should assess the most suitable actions to tackle their own energy trilemma. Therefore, the question arises as to what extent countries can address non-tariff barriers to improve trade conditions, eliminating unnecessary additional costs to trade and ultimately fostering national economic development in the interests of tackling their specific energy trilemma.

Although significant progress has been made in recent years to improve trade and investment flows in the energy sector, these topics are only just starting to be addressed within the WTO and rules appear to be limited in their scope. Furthermore, there is a need for greater understanding of these measures as they are hard to assess and differ on a regional and country basis.

For instance, the finalisation of the Trans-Pacific Partnership (TPP) Agreement represents an important step forward in this sense. Although energy is not mentioned, it is presumed to be included in the language used in the TPP as a covered good and service, particularly in sections about market access and tariffs. The TPP also affects energy trade when addressing non-tariff barriers, intellectual property and the environment.[4]

Other relevant developments include the negotiations on tariff reductions for environmental goods, such as the 2012 Asia-Pacific Economic Cooperation (APEC) List of Environmental Goods and the ongoing Environmental Goods Agreement (EGA) negotiations, which were launched in 2014 under the umbrella of the World Trade Organization (WTO).

The elimination of trade barriers for energy and environmental goods would help address the energy trilemma by granting developing and emerging economies easier access to energy. The cost of technology and energy would be reduced, thereby enhancing energy security and enabling the transition to a low-carbon energy system.[5]

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[3] World Energy Council, World Energy Issues Monitor 2015 and 2016
[4] Mathews J., 2015: Trade policy, climate change and the greening of business, Australian Journal of International Affairs, Vol. 69, Iss. 5, 2015
[5] World Energy Council, 2015: World Energy Trilemma – Priority actions on climate change and

BOX 1: CATALYSING THE LOW-CARBON ECONOMY[6]

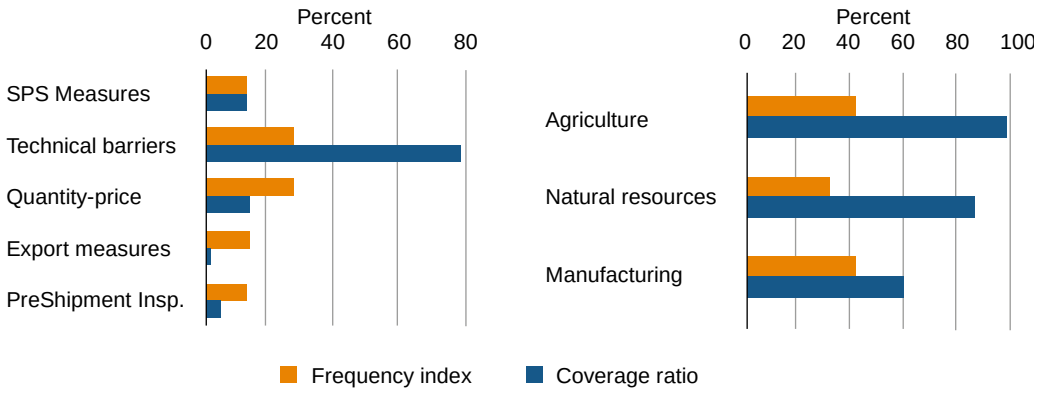
The elimination of tariff barriers on energy and environmental goods, matters. Their removal would allow for a greater total energy supply than under the status quo. Elimination of tariff barriers would reduce the cost of energy and contribute toward emissions reduction by favouring transfer of low-carbon technology. In addition, it provides countries at the forefront of driving technological innovation with an opportunity to diversify and change their economic profiles. In short, the elimination of barriers positively impacts all three aspects of the energy trilemma. Moreover, it reduces the cost of clean energy technology, increases its deployment, and enables the development of industries in countries that eliminate their tariffs.

In addition to tariffs, non-tariff measures (NTMs) also constitute a significant hurdle and should be the focus of future negotiations in the WTO and other multilateral and plurilateral platforms. Although data on NTMs is fragmented, making it hard to accurately assess the overall impact on global trade, the WTO highlights that NTMs often have a greater impact on trade than tariffs do, but they are less understood and often more difficult to observe, address and remove.[7]

Recent research by the United Nations Conference on Trade and Development (UNCTAD) indicates that in broader categories relevant to energy, such as natural resources and manufacturing, NTMs affect between 80% and 90% of trade.[8] The UNCTAD research further concludes that technical barriers to trade (TBTs) are the most pervasive NTMs, as they affect almost 80% of global exchanges, while other measures cover about 15% of trade (see Figure 2).[9] Analysis by the WTO and others has concluded that the trade effect of NTMs on the whole is twice that of tariffs.[10]

how to balance the trilemma
[6] World Energy Council, 2015: Catalysing the low-carbon economy
[7] WTO, 2012: World Trade Report, 136
[8] UNCTAD, 2014: Key Statistics and Trends in Trade Policy 2014, 16−19
[9] Ibid.
[10] A number of studies measure the effect of NTMs by using an “ad-valorem tariff equivalent”. Averaging across countries and across tariff lines, NTMs almost double the level of trade restrictiveness imposed by tariffs. WTO, 2012: World Trade Report, 136

FIGURE 2: IMPACT OF TECHNICAL BARRIERS TO TRADE



Source: UNCTAD, 2014: Key Statistics and Trends in Trade Policy 2014

This report carries forward the research and recommendations of the 2015 World Energy Council Perspectives report *Catalysing the low-carbon economy*, which focused on the elimination of tariff barriers on environmental goods. On that occasion, the Council also called for enhanced international cooperation in the energy sector, identifying coverage of non-tariff barriers and services, and the participation of more countries in existing agreements as next steps towards reducing trade barriers.[11]

This report therefore focuses on identifying the major NTMs inhibiting greater liberalisation of trade in energy goods,[12] commodities, services and investments. In exploring these measures and their impact on international trade and the energy trilemma, the Council aims to support policymakers as they design trade policies in international and domestic forums.

The report has been developed under the supervision of the World Energy Council's Rules of Trade and Investment knowledge network, which includes experts from 28 countries. The report explores the 12 main NTMs affecting the energy sector identified by the network. The paper features examples of specific

[11] World Energy Council, 2015: Catalysing the low-carbon economy
[12] The Council adopts a broad definition of energy goods, which includes oil, coal, natural gas, technologies related to energy, and renewable energy technologies, among others.

regional and national cases, also collated by the network and recorded in the Appendix. As a first effort to assemble such an overview on NTMs affecting energy goods and services, the report does not follow any specific order in terms of relevance or impact, but aims to highlight the diverse range of national realities dealing with such barriers.

NON-TARIFF MEASURES ARE ESTIMATED TO HAVE TWICE THE IMPACT ON TRADE THAN TARIFF BARRIERS.

NON-TARIFF MEASURES

1. LOCAL CONTENT REQUIREMENTS

Local content requirements (LCRs) are policy measures affecting production processes. These prescribe that businesses operating in a country are required to source a given percentage of products and services domestically. Such measures can include an obligation to deploy locally developed technologies and might also include engineering skills as well as local hiring requirements. Others might entail a minimum percentage of local equity ownership or additional levels of qualification for companies that fail to achieve stipulated ownership obligations.[13]

LCRs are usually implemented with the intention of strengthening demand in the domestic market, boosting employment, and facilitating the growth of local economies and industries, especially those in their infancy. However, LCRs can also lead to inefficient allocation of resources, reduced competition and higher barriers to technology and skills transfers. Whilst immediate benefits such as local job generation may be necessary to justify implementing expensive local content regulations, the related impacts on environmental sustainability may be highly negative.

These unintended consequences are particularly relevant in the context of renewable energy, where LCRs can reduce investment in research and development (R&D) from local and foreign investors; influence technology choice; limit and hinder low-carbon technology transfer and projects due to limited local capabilities. Although the available data does not allow an estimate of trade impacted by LCRs, the ICTSD estimates the cost to the renewable energy sector alone at over US$ 100bn each year.[14]

A selection of national and regional examples of LCRs and related WTO disputes can be found in the Appendix, Table 1.

The Council believes that it is in the interest of states and the international community to promote compliance with WTO obligations that directly and indirectly prohibit or regulate LCRs (such as in the agreements on Trade-Related Aspects of Intellectual Property Rights and Trade-Related Investment Measures).

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[13] BIORES: “Supporting renewable energy initiatives”, ICTSD International Centre for Trade and Sustainable Development, 7:3, 2013, 4–7
[14] Stephenson S: “Addressing Local Content Requirements in a Sustainable Energy Trade Agreement”, ICTSD International Centre for Trade and Sustainable Development, 2013, 3

A reduced use of LCRs and their alignment with WTO rules would favour sustainable energy systems and a balanced energy trilemma.[15] While it is beyond the scope of this paper to elaborate on alternative means to achieve economic growth and technology transfer, far more effective policy mechanisms than LCRs exist and would also support energy equity and decarbonisation priorities of countries.

2. CUSTOMS PROCEDURES

While customs procedures are the backbone of international trade, lack of transparency, inefficiencies and arbitrary application and interpretation can inhibit trade itself. In particular, lengthy customs and licensing procedures such as inspections, import license requirements, customs valuation procedures, and customs clearance requirements can become barriers to trade when they are burdensome, arbitrary and non-transparent.

An example of a customs procedure aimed at reducing tariff evasion fraud, yet vulnerable to a potential lack of transparency, is that of pre-shipment inspection (PSI) requirements described in Box 2.

BOX 2: PRE-SHIPMENT INSPECTIONS

PSIs can allow companies to inspect imports at the place of origin, in addition to the inspection at the customs of the importing country. The scope of a PSI company can include, for example, supervising the packing and loading of commodities such as coal and petroleum products. With PSIs, governments aim to ensure that the price charged by the exporter reflects the true value of the goods, and to check the quality of goods entering a country, while also mitigating attempts to avoid import taxes.

PSIs can be prominent in countries where customs administration is particularly weak and such measures are sometimes deployed to tackle tax evasion and fight corruption at customs. However, while PSIs pair with customs procedures and aid national authorities in gathering information, they can lead to weaker customs controls by overshadowing customs

[15] In energy trilemma terms, LCRs can therefore have a negative impact on: energy security, adding costs to energy projects, thus affecting their viability; affordability, due to added costs of projects which may be transferred onto the consumer; and environmental performance, whenever renewable or low-carbon energy projects are deterred due to the lack of locally produced technologies or technical skills.

procedures. Additionally, as PSI companies are paid a share of the inspected import value, they could be 'incentivised' to correct invoices to maximise their profit.[16] While PSIs are commonly misrepresented as trade facilitation measures that avoid the examination of imported goods upon arrival, the 2013 WTO Agreement on Trade Facilitation (ATF), once – and if - it enters into force, would interdict them specifically in relation to customs valuation and tariff classification,[17] also in consideration of the fact that PSIs add significantly to the cost of foreign imports.

On average, it is estimated that PSIs affect almost 20% of all trade and products across most regions (Latin America, Asia, Africa as well as high-income countries).[18] Illustrative cases of PSIs are presented in the Appendix, Table 2.

Two other examples of administrative burden related to customs procedures are the European Excise Movement and Control System and the System for Exchange of Excise Data. In both instances gaps in the electronic system, which is designed to facilitate the movement of excise goods such as hydrocarbon oil, biofuels and gas, can hinder trade, imposing delays and generating additional costs (see Appendix, Table 2).

3. CONFORMITY ASSESSMENT PROCEDURES AND TECHNICAL REGULATIONS

National and local regulations and standards, including technical specifications, certification requirements and conformity assessment procedures, may negatively impact energy trade and investment. Although they remain important tools for achieving a number of societal and environmental goals, with the idea to improve trade conditions and avoid trade discrimination, such measures can pose several trade barriers and lead to considerable added costs when their application is duplicative, inefficient, or discriminatory.[19]

[16] UNCTAD, 2012: Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries, UNCTAD/DITC/TAB/2012/1
[17] WTO, 2013: Agreement on Trade Facilitation, Article 10: Section 1
[18] UNCTAD, 2012: Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries, 6, UNCTAD/DITC/TAB/2012/1
[19] USITC, 2008: Technical Barriers to Trade: Reducing the Impact of Conformity Assessment Measures, 10

Their removal has been one of the top priorities in trade liberalisation programmes, expressed in the concept of 'one product, one test accepted everywhere'.[20]

Conformity assessment procedures (CAPs) tend to inhibit trade when reiterative of internationally recognised certifications. Some of these barriers may be ameliorated through regulatory cooperation efforts, but the challenges facing the energy sector in this area remain of concern.[21] For instance, the practice of labelling products according to environmental criteria ('eco-labelling') has grown over the past few years. These measures bear a number of potentially positive effects, such as providing clear and reliable information to consumers. However, labelling schemes can discriminate between countries and could be misused to protect domestic producers.[22]

Small- and medium-sized enterprises (SMEs) and developing countries can be amongst the most penalised in attempting to meet these conformity requirements. For example, under the WTO Technical Barriers to Trade (TBT) Agreement, member countries are obliged to adopt international standards, wherever feasible, of their own accord. The most widely adopted standards are those developed by the International Organization for Standardization (ISO), such as the ISO 50001 and 14001, concerning energy and environmental management, respectively. While the intended result is to reach a globally harmonised management system through countries' voluntary commitments, the adoption of a particular set of standards can distort competition. The lack of current harmonisation can make it particularly difficult for SMEs to comply. Obtaining ISO certification is also expensive, which constitutes a big barrier for SMEs and start-ups.

BOX 3: TECHNICAL BARRIERS TO TRADE: ENERGY EFFICIENT APPLIANCES IN THE TRANS-PACIFIC PARTNERSHIP

The technical barriers to trade (TBT) section of the recently concluded Trans-Pacific Partnership (TPP) addresses this form of non-tariff measures. This section encourages transparent and non-discriminatory standards harmonisation and collaboration. The section builds on existing trade pacts,

[20] OECD, 2005: Standards and Conformity Assessment in Trade: Minimising Barriers and Maximising Benefits: Workshop and Policy Dialogue, 7
[21] For example, in some developing countries, CAPs make imports more expensive, difficult and time-consuming, especially for small and medium deliveries. Lack of knowledge and training of local agents contributes to making the procedures cumbersome.
[22] WTO: Labelling, https://www.wto.org/english/tratop_e/envir_e/labelling_e.htm

including the WTO TBT Agreement, to reduce barriers to trade deriving from technical regulations, standards, and conformity assessment procedures.

Energy efficient appliances are a good example of a product type with different labelling requirements around the world. In the context of the TPP, for instance, while the United States (U.S.) utilises the ENERGY STAR rating labels (together with Australia, Canada, Japan and New Zealand, which are international partners of the U.S. for the ENERGY STAR programme), other TPP-participating countries may require different labelling or no labelling at all. While the TPP protects the right of governments to set high standards, including environmental standards, it favours reciprocal certification and international collaboration to enforce them.

The effect of the TBT chapter of the TPP would be likely to accelerate standards harmonisation among TPP countries, as it is already the case for the ENERGY STAR programme. If other TPP countries also adopted these standards, energy-efficient products would need to meet a high, harmonised set of standards across all participating countries. Trading relationships would be favoured and energy efficient products could become cheaper.[23] Therefore, access to certified efficient products at a low cost would positively impact the energy equity and environmental sustainability dimensions of the energy trilemma. Emerging countries participating in the TPP (e.g. Malaysia, Mexico, Peru, Vietnam, Chile, and Brunei) would especially benefit of extended and harmonised trade conditions to improve their overall trilemma performance.

The Council believes that the overriding rule in the development and implementation of CAPs should be non-discrimination in accordance with the basic tenets of the WTO TBT Agreement. To this end, the choice and design of CAPs should be reduced to the relevant requirements laid out in technical regulations or standards, ensuring that the actual nature of the risks of products, processes or systems under consideration are effectively addressed on a fair, transparent and non-discriminatory basis.[24]

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[23] Varun S: “TPP: A Small Step in the Right Direction on Climate”, Council on Foreign Relations, 6 November 2015, http://blogs.cfr.org/levi/2015/11/06/tpp-a-small-step-in-the-right-direction-on-climate/

[24] For example, an adjustment of CAPs could target products posing only minor risks, which could be effectively mitigated simply through first-party testing and supplier's declaration of conformity schemes. At the same time, products with sufficiently high risks of a specific nature

Private industry standards are an important feature in international energy trade. However, these can operate as *de facto* NTMs, particularly if they are not developed with the objective of broad application, are too regionally focused, or have an anti-competitive bias.

To avoid trade distortions and respond to the interests of ensuring greater trade liberalisation of low-carbon energy goods and services, industries should be encouraged to formulate standards on a transparent and non-discriminatory basis, avoiding private standards that are trade-inhibiting or anti-competitive in effect.

4. GOVERNMENT PROCUREMENT

Government procurement practices refer to mechanisms through which government agencies purchase goods and services. These may constitute NTMs if the government favours domestic suppliers, discriminating against competitive imported goods or services.

National and regional/local governments may, for example:

- establish preferential qualification conditions favouring local providers in the bidding process. For instance, tenders may be narrowly defined and *de facto* tailored to local companies with specifications that, in practice, can be met by only local or favoured bidders;
- require foreign participants to provide unnecessary documentation or meet unreasonable deadlines;
- restrict state-owned enterprises from contracting with foreign firms except where domestic expertise is unavailable; or
- require state-owned energy companies to source higher shares of local content in successive bidding rounds.

The WTO Agreement covers this kind of discrimination through the Government Procurement Agreement (GPA).[25] However, not all WTO Members are subject to its provisions. Signatories to the GPA commit to offering national treatment and non-discrimination in relation to government procurement of goods, services and suppliers of other signatories, ensuring a real chance to compete for government contracts.

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may require inspection and certification of production facilities and processes.

[25] The WTO GPA was signed in 1994 and is included as one of the "plurilateral" agreements in Annex 4 to the Agreement establishing the WTO.

Notwithstanding this, NTMs in the procurement field can inhibit market access for energy goods and services, even where governments are signatories to the WTO GPA. For example, the GPA still permits the exclusion of some energy sectors altogether, and allows signatories to list a restricted number of national or sub-national procuring entities.

The removal of such measures would help improve a country's trilemma balance, spurring a trade-off between environmental performance and energy security. As such, the World Energy Council believes that greater levels of GPA participation and progressive enlargement of the scope of GPA in the energy sector are desirable goals for the international community, in order to address a diverse range of energy issues and guarantee a more holistic approach.

Mexico provides an illustrative example (see Appendix, Table 3) of a country not being a signatory of the WTO GPA agreement, with as many as seven Free Trade Agreements (FTAs) with 38 countries from the Americas, Europe, and Asia about government procurement.

5. TAXATION

Local taxation laws are a form of a NTM that can discriminate against foreign investments or imports, thereby affecting trade of energy goods and services.

Article III of the General Agreement on Tariffs and Trade (GATT) requires that members not use internal taxes to discriminate between 'like' local products and imported ones. Notwithstanding such commitments, there are a range of NTMs encountered in the taxation realm.

In some cases, fiscal measures may be applied in a directly discriminatory manner to foreign firms in contravention of GATT Article III. Similarly, tax exemptions and reductions may be granted to enterprises that use domestic products rather than imported ones.

Some jurisdictions appear to allow preferential tax rebates or other incentives for local inputs in the production of energy goods such as transport fuels.[26] Non-transparent or highly complex and onerous tax reporting obligations can create a competitive disadvantage for foreign services and suppliers affecting international

[26] A number of disputes related to tax discrimination have been raised at the WTO, including against China, who had to repeal a number of provisions on income tax laws for foreign enterprises, and Brazil, where the federal system prevents the WTO rules from being implemented (see Box 4 and Appendix, Table 4 for further details).

trade as they can deter investments and technology transfers. In addition, persistent tax frauds on imported goods can present a barrier to trade.[27]

BOX 4: MEXICO VS. CHINA ON INTERNAL TAX DISCRIMINATION

A WTO dispute settlement case (WT/DS359/14) was raised by Mexico against China in 2007, and saw a number of countries (Argentina, Australia, Canada, Chile, Colombia, Egypt, Japan, Chinese Taipei and the European Union) join the complaint. The consultations concerned income tax exemptions or reductions granted to enterprises on the condition that they purchase domestic rather than imported goods, or that these enterprises meet certain export performance criteria. The issue was resolved by China repealing a number of provisions, including tax exemptions for industries purchasing domestically produced equipment or investing in its R&D, and the income tax law regulation for enterprises with foreign investment and foreign enterprises.[28]

6. SUBSIDIES

Governments may use subsidies[29] in the energy sector for a variety of public policy reasons, such as to improve security of supply, reduce air pollution and greenhouse gas (GHG) emissions, strengthen competitiveness, or provide social benefits and protect employment. In 2014, global fossil fuel subsidies amounted to US$490bn, while renewable energy support amounted to US$135bn.[30]

[27] For example, Value Added Tax (VAT) losses in the European Union, for the greatest part due to fraud, estimated at €168bn in 2015, could discourage importing certain products in the area (see Appendix, Table 4). Furthermore, in recent years frauds have been perpetrated in the European trade of emissions reduction certificates. The impact of this fraud was €5bn in losses of national tax revenues between 2008–2009.

[28] WTO, 2008: China – Certain Measures Granting Refunds, Reduction or Exemptions from Taxes and Other Payments, https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S009-DP.aspx?language=E&CatalogueIdList=84216&CurrentCatalogueIdIndex=0&FullTextHash=

[29] Subsidies are commonly of two main types: (1) Direct subsidies i.e. payments that governments allocate to organisations, manufacturers or consumers with the aim of stimulating certain activities, such as cash transfers and low interest or reduced rate government sponsored loans. (2) Indirect/off-budget subsidies i.e. tax exemptions and rebates, preferential market access, regulatory support mechanisms and preferential access to natural resources. EEA, 2004: Briefing – Energy subsidies and renewables, 2/2004, http://www.eea.europa.eu/publications/briefing_2004_2

[30] Subsidies to aid the deployment of renewable energy technologies in the power sector were US$112bn in 2014 (plus US$23bn for biofuels). IEA, 2015: World Energy Outlook 2015, 343

As political priorities and technology evolve, it is questionable whether subsidies in the energy sector are effective in meeting public policy goals without detriment to the efficient use of energy.[31] Subsidies for fuels and electricity can result in the inefficient use of energy.

Both governments and industry recognise that government support should be limited[32] and respect the principles enshrined in the WTO Agreement on Subsidies and Countervailing Measures (SCM). Energy-related subsidies should minimise adverse trade effects, and should have a clear end point built-in from the start.[33]

Subsidies and support for research and development into renewable energy and related technology may be initially necessary, and are widely accepted. With careful design, they can avoid inhibiting trade or hampering economic growth, which would prevent efficient allocation of resources and production specialisation that would otherwise occur. Such subsidies could limit economies of scale and learning effects (see Appendix, Table 5 for recent cases).[34]

At the 2009 G20 summit in Pittsburgh, world leaders of the G20 pledged to reduce and eventually phase out inefficient fossil fuel subsidies. Progress in this sense can be attributed to the fact that subsidies have become a major fiscal burden on government budgets as a result of fast-growing energy demand, alongside growing political momentum around climate goals. Furthermore, with the recent drop in oil prices, many countries have sought the opportunity to cut subsidies without having a significant impact on prices or inflation.[35] Malaysia, Indonesia and Saudi Arabia are among the most illustrative examples of countries that have put in place progressive energy subsidies reforms (see Appendix, Table 5).

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[31] EEA, 2004: Technical report – Energy subsidies in the European Union: A brief overview

[32] One particular form of renewable energy subsidy worth noting is the “Feed-in tariff” (FiT), a policy that sets a fixed, guaranteed price over a stated fixed-term period at which small or large generators can sell renewable power into the electricity network, and which usually guarantees grid access to renewable electricity generators. Some policies provide a fixed tariff while others provide fixed premium payments that are added to wholesale market, or cost-related tariffs. FiTs have been widely used across the globe, need not discriminate between countries, and can be very effective in promoting a certain technology or type of technology. However, if improperly applied, they can drive up costs for clean megawatt-hours, weakening public support for renewables, and often increasing total policy costs beyond initial estimates, promoting inefficiencies and instabilities in the system.

[33] World Energy Council, 2012: World Energy Trilemma: Time to get real – the case for sustainable energy policy

[34] EEA, 2014: Technical report – Energy support measures and their impact on innovation in the renewable energy sector in Europe, 21/2014, 64

[35] IEA, 2015*:* World Energy Outlook 2015, 98

7. INVESTMENT RESTRICTIONS

A number of jurisdictions maintain restrictive policies on investment in the energy sector, including in the exploration, development and production phases of oil and gas. These may include: investment approval processes for foreign investors; and currency controls that force companies to buy or receive payments in local currency, such as advance payment requirements and regulations governing foreign exchange rates.[36]

Investment restrictions are often introduced to protect local industry and ownership of resources. Yet, they can unintentionally prevent resources, best expertise and available technologies being exploited to their full potential, and can negatively impact foreign direct investment (FDI) inflows.

BOX 5: CONSTITUTIONAL REFORMS IN MEXICO

In December 2013, the Mexican Congress approved a number of amendments to its Constitution, effectively allowing private, both domestic and foreign, investment in the energy sector (i.e. exploration and production of oil and gas, power generation and distribution). Such liberalisation of the market can help balance the energy trilemma, by lowering energy prices, securing more reserves and allowing investments in low-carbon technologies.

Some countries, including several members of the G20, have implemented investment policy measures to lift restrictions on FDI (see Appendix, Table 6). Global growth in investments in clean energy in 2015 was recorded as nearly six times higher than in 2004, with emerging countries recording the greatest increase in investments. Top recipients of inward investment into clean energy were Mexico (US$4.2bn, up 114%), Chile (US$3.5bn, up 157%), South Africa (US$4.5bn, up 329%) and Morocco (US$2bn, up from almost zero in 2014).[37]

[36] International Trade Centre, 2012: Non-Tariff Measures Classification, chp G: “Financial Measures”, http://www.intracen.org/itc/market-info-tools/non-tariff-measures/understanding-ntms/
[37] BNEF, 2016: Clean Energy Investment: Q4 2015 Factpack

8. TRANSPARENCY OF ADMINISTRATIVE LICENSING

Despite WTO non-discrimination and national treatment obligations and the provisions in the ATF, energy companies may encounter burdensome and discriminatory local administrative licensing processes.

A non-transparent, fragmented and lengthy permitting phase can deter investment (see Appendix, Table 7 for examples). In addition to prolonging the project lifecycle, such processes can result in unforeseen legal expenses, especially for foreign companies that are less familiar with local bureaucratic requirements. As such, companies may need to hire specialised local support to ensure compliance.

Special efforts to simplify and improve the transparency of such administrative requirements could meet regulatory objectives while encouraging investment in the energy sector.

BOX 6: THE 2016 POLISH LAW ON WIND INVESTMENTS[38]

A key example of burdensome administrative procedures is the Polish law on wind investments that was proposed on 19th February 2016.[39] It defines the distance between a wind turbine and any building as ten times the wind turbine tip height. The law also sets out lengthy and expensive permitting procedures that would hinder the development of projects in Poland and effectively render new projects unviable. In fact, wind farms operators would:

- **need to obtain an operation permit every two years, for which they will be charged a fee of up to 1% of the wind turbine investment cost (which is roughly 40 times more expensive than procuring equivalent services on the market);**
- **need to obtain approval for any repair or modernisation of technical fixtures of a wind turbine.**

Imposing these rules would damage investor confidence and create expensive and cumbersome obligations for operators.

[38] The law was proposed by Member of Parliament in the governing Law & Justice party, which has favoured coal over renewables, and was approved by the lower house of parliament, the Sejm, on 20 May 2016.
[39] Wind Power Monthly, 14 March 2016, 'Analysis: Proposed Polish law puts damper on wind'. Financial Times, 17 April 2016, 'Bill threaten Polish wind power, warns industry'

BOX 7: ADMINISTRATIVE LICENSING IN ITALY

Lengthy and complex administrative procedures pose a barrier to both local and foreign investment in the Italian energy sector. The permitting phase is frequently long and fragmented, involving a variety of agencies and bodies responsible for separate parts of the procedure. For example, the construction of transmission lines in the northern region of Friuli Venezia Giulia took twelve years to be finalised (consisting of two years for construction, one for procurement and nine for the permitting phase).

9. PROCESS AND PRODUCTION METHODS

Process and production methods (PPMs) create requirements as to how a product is manufactured or how natural resources are recovered. Countries are applying increasing numbers of PPMs to production in countries with which they trade. PPM trade disputes are therefore a rapidly growing area of international trade litigation.[40]

Attempting to control, facilitate or prevent imported energy goods by reference to PPMs raises a number of international trade issues. The main concern rests on how such issues can be dealt with effectively under existing WTO Agreements, specifically GATT Article XX and TBT Agreements. According to WTO rules, there should be no discrimination between 'like' products.

'Likeness' is defined by the inherent physical qualities of the product and its applications, and does not take into consideration how given goods are produced. The oil sector is at the forefront of NTMs based on production methods and processes.

Restrictions on goods deriving from specific methods of production are often intended or perceived to have a positive impact on environmental sustainability. However, these benefits are often contested with discrimination between 'like' products possibly impacting energy security.

[40] Read R., 2005: 'Process and production methods and the regulation of international trade', in N Perdikis & R Read (eds), 'The WTO & the Regulation of International Trade: Recent Trade Disputes Between the European Union & United States'

BOX 8: NORTH AMERICAN OIL SANDS

One highly publicised case of PPMs is that of the restrictions facing North American oil sands crude and the derivate refined products in accessing markets. The lack of approval of the Keystone XL pipelines is the most recent example whereby crude from oil sands production is not able to access markets, while other crudes with equal or higher environmental impacts are.

Likewise, a number of restrictions have been proposed targeting refined products manufactured from oil sands in North America. The California Air Resource Board's initial proposal for a low-carbon fuel standard is one case of discrimination based to some extent on source of production. As a result of legal challenges, the initial proposal was ultimately replaced with a rigorous lifecycle analysis that applies to all feedstocks.

The same controversial issue was also experienced in Europe with the Fuel Quality Directive (Directive 98/70/EC amended by Directive 2009/30/EC), which took a new regulatory approach of considering the lifecycle GHG emissions of transport fuels (see Appendix, Table 8 for further details).

10. INTELLECTUAL PROPERTY PROTECTION

Lack of protection and weak enforcement of intellectual property rights (IPRs) with respect to patent, trademark, copyright and trade secrets can be a major issue facing providers of energy goods and services. Safeguarding intellectual property (IP) through robust laws and enforcement, as well as an enabling environment that protects and nurtures the development of intellectual property are critical elements to promoting energy investment and trade.[41]

Both consumers and economies gain significantly from access to technology and innovation within a fair and effective IP regime. Patent publication, for instance, spreads new ideas and technologies, stimulating further innovation. IP protection is particularly important in developing clean energy technologies. Additionally, once patents expire, these technologies will have widespread diffusion.

[41] World Energy Council, 2011: Energy Sector Environmental Innovation: Understanding the Roles of Technology Diffusion, Intellectual Property Rights, and Sound Environmental Policy for Climate Change, 9

In line with the COP 21 commitment to reduce CO_2 emissions, increased deployment of low carbon technologies and energy efficiency are essential to guarantee a secure and accessible energy supply in the long run. Both these options are highly dependent on new technologies (e.g. smart grids and smart meters), which require patent protection.

In this context, it is noteworthy that patent registration in emerging markets has grown rather dramatically. Significant investments in clean energy technology have been observed; for example, in India, where the focus is on solar and carbon capture and storage (CCS) technologies (see Box 9).

BOX 9: CLEAN ENERGY TECHNOLOGY INVESTMENT IN INDIA[42]

India has committed to curbing CO_2 emissions and achieving about 40% cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030. With ambitious plans to install CCS in new coal-fired generation plants and scale up renewables (60 GW and 100 GW of respectively wind and solar installed capacity by 2022), the country has called for global cooperation in research and development, particularly in clean energy technologies. The Indian government has suggested that IPR patent-filing fees for developing countries be waived or covered by the Green Climate Fund. Even though such fees could be perceived as an added cost, numerous studies have shown that IPR protection is an enabler of low-carbon technology markets. In fact, IPR protection helps promote innovation and enables technology uptake, counteracting the innovation-inhibiting effects of forced transfer prices.

11. COMPLEXITY OF THE LEGAL SYSTEM AND ENFORCEABILITY OF CONTRACTS

Prompt, predictable and effectively enforced decisions are the basis for an open, fair and transparent justice system. Countries that promote the protection of individual and property rights with a strong and predictable rule of law offer greater stability and attractiveness for international investors and traders.

[42] India's INDC submitted to the UNFCCC ahead of the climate negotiations of COP21, http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf

BOX 10: ITALY AND ITS INEFFICIENT JUDICIAL SYSTEM

The inefficiency of the Italian judicial system contributes to creating a difficult business environment, which hampers investments and economic growth.[43] Excessive delays in court proceedings dominate enforcement of civil and commercial claims, resulting in an extremely large number of pending cases. As the International Monetary Fund observes, the performance of the Italian justice system is well below European and Organisation for Economic Co-operation and Development (OECD) standards as it takes an average of 1,185 days to enforce a contract in Italy, more than twice the OECD high-income country average.[44] For investors, this is a considerable issue when it comes to credit recovery. A credit recovery ruling can take several years to be issued. Italy, in fact, is not up to standards with regards to the time needed to resolve administrative, civil and commercial cases,[45] as well as to enforce contracts.[46] Additional barriers stem from the highly complex and onerous tax reporting obligations, which make it difficult for a foreign investor to understand the tax system and applying it, both at the national and the local level.[47]

An efficient and equitable judicial system can improve the business climate, foster innovation, attract FDIs, secure tax revenues and, as a result, support economic growth. Complex legal systems affect the enforceability of contracts, and credit recovery can be difficult. Both are matters of concern to providers of energy goods and services. These are often challenging NTMs, which directly and indirectly impact investments and exchange of energy goods and services.

[43] Compared to its European neighbours, Italy attracts little foreign direct investment (FDI) but nevertheless ranks 11th among global investors (UNCTAD, 2014: World Investment Report). FDI flows are especially volatile and fall and rise in reaction to the circumstances created by the economic crises. After recovering in 2011, they again fell sharply. In 2013, FDI influx to Italy recovered, reaching €12bn. However, this still represents a 58% decrease compared to their pre-crisis levels in 2007. FDI inward flow (in million USD): 2012 = 93; 2013 = 25,004; 2014 = 11,451. Santander Trade Portal: Italy: Foreign Investment, https://en.santandertrade.com/establish-overseas/italy/foreign-investment?&actualiser_id_banque=oui&id_banque=44&memoriser_choix=memoriser

[44] IMF, 2014: Judicial System Reform in Italy – A Key to Growth

[45] OECD, 2013: What makes civil justice effective? Economics Department Policy Notes, No. 18. The OECD average to complete a civil case up to the Supreme Court level is 788 days, while it is almost eight years in Italy.

[46] The World Bank ranks the country as 147th out of 189. Ranking available here: http://www.doingbusiness.org/data/exploretopics/enforcing-contracts

[47] The World Bank ranks Italy 137th out of 189 in its taxation index. Ranking available here: http://www.doingbusiness.org/data/exploreeconomies/italy/

12. EXPORT PROHIBITIONS AND LIMITATIONS

Although export restrictions distort trade flows to the same extent that barriers affect imports, the former are not sufficiently addressed in WTO rules. Potential diversion of supply to the domestic market reduces export volumes and the availability of given products, impacting on international price competition. Export restrictions can also distort the creation of a single market, generating artificial price signals. For example, limiting oil exports has the effect of lowering domestic prices, discouraging production, and, ultimately, threatening energy security. Yet, it must also be acknowledged that export restrictions can play a relevant role in the context of environmental protection. For instance, to prevent or slow down the depletion of a country's natural resources including minerals and domestic fossil energy sources.

The disciplines in the WTO system on export restrictions are fewer than those regulating import barriers: no single GATT/WTO article deals with export restrictions as such. While quantitative export restrictions are prohibited by GATT rules, there are exceptions, and current rules do not proscribe the use of export taxes or duties.

BOX 11: U.S. CRUDE OIL EXPORT BAN

In December 2015, in a move to counter the general trend, the US Congress voted to lift the 40-year-old ban on crude oil exports as part of a broader spending bill. Since the 1973 Arab oil embargo had severe repercussions on the economy, the U.S. had blocked most exports of crude oil. By the end of 2015, production had reached 9m barrels a day (up from an average of 7.4m barrels a day in 2013).

The surge in production is attributable to the revolution in oil and gas production technology that has recently exploded in the U.S. thanks to horizontal drilling and hydraulic fracturing. In 2013, for the first time in two decades, the U.S. produced more oil than it imported. In June 2015, the country became the world's biggest producer of oil and gas, surpassing both Saudi Arabia and Russia.

Whilst GATT Article XI specifies that exports should not be subject to quantitative restriction, there are no restrictions applied on the level of export taxes that can be charged. Exceptions would apply to some new WTO members that accepted restrictions on export taxes as part of their accession protocol. Such commitments to reduce or remove export taxes vary across members.

Outside of the WTO accession commitments, export restrictions are seemingly becoming more commonplace. Governments are increasingly concerned about the economic impact of these measures, especially for goods produced in limited locations and of strategic importance.[48]

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[48] OECD, 2011: Reports on G20 Trade and Investment Measures (Mid-October 2010 to April 2011), 20–22, http://www.oecd.org/daf/inv/investment-policy/47955250.pdf

CONCLUSIONS AND RECOMMENDATIONS

International trade and technology transfer are key in addressing the energy trilemma, promoting an energy transition and meeting the climate and energy objectives set by the United Nations, G20 and the Conference of the Parties (COP).

While a number of international efforts have been progressing in this area - particularly for instance the push towards elimination of tariff barriers - NTMs also require attention. International efforts to address NTMs are critical given their significant impact on trade worldwide and the challenges in identifying such measures.

As noted in this report, there are some existing WTO rules restricting the use of trade-inhibiting NTMs. Bilateral and plurilateral trade agreements frequently contain specific provisions in this area. However, these rules do not cover all types of NTMs and, where they do apply, are proving difficult to enforce in a consistent manner.

In order to support policymakers in moving forward with a NTM-related agenda, the World Energy Council has outlined the key measures relating to the energy sector that deserve particular attention. The most relevant non-tariff barriers to trade stem from LCRs, which can lead to inefficient allocation of resources, distorted competition and limits to technology and skill transfers, ultimately causing countries to fall short of their growth and development targets, or to meet them in a costlier manner. A similar detrimental effect can emerge from discriminatory government procurement rules, often closely connected to LCRs. Other measures such as conformity assessment procedures, regulatory standards and technical regulations that normally aim to improve trade conditions can pose trade barriers and add considerable cost when their application is duplicative, inefficient, or discriminatory. Finally, some areas such as export restrictions remain rather under-regulated in international trade law.

Together with COP 21, WTO and other initiatives, complementary and parallel efforts by governments to deal specifically with the trade-inhibiting effect of NTMs are now both appropriate and timely. In particular, NTMs related to environmental goods should be addressed to enable the energy sector to transition towards decarbonisation in a cost-effective and efficient manner. Addressing and removing these complex barriers to international trade will contribute to the effectiveness of agreements reached in all international arenas and support the development of sustainable and climate-resilient energy systems.

The World Energy Council urges WTO members or a plurilateral group of WTO members to undertake a comprehensive initiative to phase out NTMs on those products covered in the current plurilateral environmental goods tariff negotiations. Where existing rules apply, these should be enforced and, as needed, classified. Where rules do not exist, WTO members should consider developing them. With this report, the World Energy Council highlights the need to address government-imposed barriers to trade of energy and environmental goods and services as one of the key elements to help countries balance their energy trilemma.

Improving trade conditions, eliminating unnecessary cost to trade and fostering national economic development would help catalyse the low-carbon economy. As the world largest economies are making progress helping finance low-carbon technologies, the elimination of tariff and non-tariff barriers to trade is an equally powerful economic force.

UNDERSTANDING AND TACKLING NON-TARIFF MEASURES SHOULD BE THE PRIORITY IN A COUNTRY'S EFFORTS TO SUCCESSFULLY ADDRESS ITS ENERGY TRILEMMA AND CATALYSE THE LOW-CARBON ECONOMY.

APPENDIX

The following case studies were submitted by the World Energy Council knowledge network on Rules of Trade and Investment. These provide a demonstrative overview of NTMs in the energy industry, highlighting key examples of the impact on trade.

TABLE 1: LOCAL CONTENT REQUIREMENTS

Country/region	Description
East Africa	In most East African countries, the demand for electricity is high. As not many locally developed technologies or engineering capabilities are available, LCRs are currently not very strong. In countries where these conditions improve, LCRs are expected to increase in the future.
Ghana	In Ghana, the 2013 Petroleum (Local Content and Local Participation) Regulation set the target for 60–90% of goods and services to be provided by local companies by the end of the decade. The Ghanaian government gives preferential treatment to local companies when granting petroleum agreements and licenses. Foreign companies operating in Ghana are required to set up a joint venture, with a local partner holding at least 10% of the equity.[49]
Mexico	Mexico applies flexible LCRs to allow for technology and skill transfers. The North American Free Trade Agreement (NAFTA), and now the TPP, allow for up to 25% (and exceptionally up to 40%) of LCRs in privately funded (foreign or domestic) projects. [50] LCRs are determined on a case-by-case basis, so if the technology is unavailable it is normally imported. For example, the construction of power lines requires 34–40% of local content because the necessary technology is available locally, whereas the construction of wind farms requires only 10% because of lower domestic capacity.

[49] Msimang, A and Cull, J: "Regulations, local content requirements on the rise in West Africa", Offshore magazine, http://www.offshore-mag.com/articles/print/volume-74/issue-2/departments/regulatory-perspectives/regulations-local-content-requirements-on-the-rise-in-west-africa.html
https://www.andrewskurth.com/pressroom-publications-1154.html?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original

[50] "Notwithstanding any other provision of this Chapter, an entity may impose a local content requirement of no more than: (a) 40 percent, for labour-intensive turnkey or major integrated projects; or (b) 25 percent, for capital-intensive turnkey or major integrated projects." NAFTA, Annex 1001.2b, General Notes, Schedule of Mexico, paragraph 6, http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/nafta-alena/text-texte/10.aspx?lang=eng

Nigeria	In some countries in West Africa, regulations on LCRs are rather strict, particularly in the context of offshore oil and gas activities. In Nigeria, service companies have to comply with the 2010 Nigerian Oil and Gas Industry Content Development Act, which established several restrictions with regards to companies' local content targets, their shareholding and joint venture agreements.
United States[51]	Section 27 of the Merchant Marine Act of 1920 (also known as the Jones Act) mandates that any ship that sails between two U.S. points must fly a U.S. flag be constructed in the U.S., and be owned and crewed by U.S. citizens or permanent residents. As the American offshore wind industry starts investing on large projects, developers are severely impacted by such provisions. In fact, once an offshore wind turbine foundation is installed, it counts as a U.S. point. However, the U.S. is not equipped with any vessels built specially for the offshore wind industry. Foreign companies could favour the development of offshore wind projects by providing advanced technology and ad hoc vessels for turbine installation. However, foreign investors are facing severe constraints: a specialised foreign vessel working offshore would not be allowed to bring any cargo from the port to the point where the turbine is being built. This leads to technical and operational issues that add to the cost of the project and, as such, hinder competitiveness.

TABLE 2: CUSTOMS PROCEDURES

Country/region	Description
Europe	Excise Movement and Control System (EMCS) is a computerised system that tracks movement of all excise goods travelling under duty suspension provisions for which excise duties still have to be paid. These include a number of energy products such as hydrocarbon oil, biofuels and gas. The purpose of the EMCS is to guarantee the secure movement of excise goods through pre-dispatch checks on traders; simplify procedures with an EU-wide standardised, electronic system; and accelerate the release of guarantees when goods arrive at their destination. Additionally, the system aims at tackling fiscal

[51] Offshore WIND: "U.S. Offshore Wind Developers Search for 'Jones Act' Solution", Offshore WIND, 2013, http://www.offshorewind.biz/2013/12/30/u-s-offshore-wind-developers-search-for-jones-act-solution/

	fraud. However, companies trading energy products under duty suspension encounter a number of issues due to gaps in the electronic system and the limited functoning of the System for Exchange of Excise Data (SEED) database, which stores the excise authorisation of every consignee for the product. This service allows the verification of excise numbers but, because the information is available on a public site, it is intentionally limited. Should the search yield no results, traders are not given a reason as to why results cannot be displayed. Several European Union (EU) associations representing EU refineries, independent fuel suppliers, tanks and storage, as well as the tobacco and alcohol industries, are currently engaging in a formal forum with the European Commission to tackle the EMCS and SEED issues.
Indonesia	The Indonesian National Single Window authority in charge of improving transparency over NTMs integrates the data processing systems of several agencies into a single portal. Importers and exporters can therefore simultaneously submit applications for export or import clearance to different agencies.[52]
Philippines	On 12 November 2015, the Philippines approved a reform of the outdated 1978 Tariff and Customs Code of the Philippines, generating the new Customs Modernization and Tariff Act (CMTA). The CMTA transforms the national Bureau of Customs (BoC) into a modern and efficient organisation by complying with global standards.[53] Among the provisions, a new note on pre-shipment inspections has been inserted, according to which import shipments should undergo inspection at the place of origin at the expense of the shipper. Poorer countries, where corruption in customs bureaucracy and export agencies is widespread, are willing to outsource their customs control to lucrative external firms, therefore heading towards a privatisation of customs control.
South Africa	In some African countries, customs procedures are burdensome due to limited or no possibility of contacting customs offices, lengthy procedures, and additional expenses incurred by unjustified taxes. The Southern African Development Community Protocol on Trade aims at eliminating all NTMs and calls for members of the community

[52] UNCTAD, 2012: Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries, 60, UNCTAD/DITC/TAB/2012/1
[53] AAMBIS-Owa: “Briefer – Customs Modernization and Tariff Act”, AAMBIS-Owa, 2014, http://www.aambis.com/sites/default/files/legislation-attachments/Briefer%20on%20CMTA_CSSG.pdf

	to refrain from imposing new ones. Among the most damaging non-tariff barriers that require attention are: • cumbersome customs documentation and procedures; • import and export licensing and permits; • import and export quotas; • unnecessary import bans and prohibitions; • import charges not falling within the definition of import duties; and pre-shipment inspections.[54]

TABLE 3: GOVERNMENT PROCUREMENT

Country/region	Description
Mexico	Although Mexico has not joined the WTO GPA, the country has in effect seven Free Trade Agreements (FTAs) with 38 countries from the Americas, Europe and Asia covering government procurement. Two additional FTAs that will add seven more countries are in the advanced stages of negotiations. These FTAs cover the procurement of Mexican state-owned enterprises (SOEs) of the oil, gas and electricity sectors, committing them to open most of their tendering processes to suppliers from other parties under equal and non-discriminatory conditions. Furthermore, private power producers can now compete with SOEs in government procurements. Established authorities control prices to ensure contracts are assigned to the best offeror. Currently, 25–30% of power is generated by the private sector but has to be sold to the government, whereas, following the recent constitutional reforms, it will be sold to large-scale consumers. For maritime oil and gas operations in the Gulf of Mexico, SOEs were asked to select fields of operation and the remainder was offered to private enterprises in order to spur private investment in new generation.

[54] Ibid. 52

TABLE 4: TAXATION

Country/region	Description
Europe	EU countries are estimated to have lost €168bn in sales tax revenues in 2013,[55] mostly due to value added tax (VAT) fraud and errors. This type of fraud (also known as 'missing trader' fraud) exploits the fact that multi-jurisdictional trading within the EU is exempt from VAT. A fraudulent business (or individual) imports goods from a different member state VAT-free and sells the goods in its own member country charging VAT, which is then stolen and not returned to the treasury.

TABLE 5: SUBSIDIES

Country/region	Description
China	China put in place supportive government policies for the integration of wind-generated electricity into the grid (45 GW in 2010), as well as manufacturing of wind turbines. Advantageous loans were given to manufacturing projects using locally produced components. In 2010, the US (particularly the United Steelworker's Union) filed a complaint that China was illegally subsidising its wind power and solar PV exports in violation of WTO obligations. In 2010, the US Trade Representative started an investigation into China's support for makers of wind and solar technology, advanced batteries, and energy-efficient vehicles.[56]
Indonesia	As of January 2015, Indonesia removed subsidies on premium gasoline and introduced a "fixed" subsidy on solar diesel. However, the overall impact was a decrease in gasoline and diesel prices, due to low oil prices, which ultimately brought international oil prices below the levels of domestically regulated prices. In addition, a new fuel subsidy scheme introduced three new classifications of fuel products with different implications on subsidies:

[55] CASE: "Study to quantify and analyse the VAT Gap in the EU Member States", Europa, 2015, http://ec.europa.eu/taxation_customs/resources/documents/common/publications/studies/vat_gap2013.pdf

[56] Campbell R., 2014: China and the United States—A Comparison of Green Energy Programs and Policies, 20

	• specific fuel (solar diesel and kerosene that still receive a subsidy); • designated fuel (gasoline that is intended to serve remote or hard-to-reach areas. It is described as “non- subsidised”, but it will in fact still receive a subsidy compensating for its distribution cost); • general fuel (fully non-subsidised gasoline. It is to be distributed at its full market price).
Malaysia	Since 2010, the Malaysian government decided to increase the electricity prices at regular time periods and established the Subsidy Rationalization Program (SRP). Yet, only in 2011 tariffs increased due to supply shortages of natural gas. Gas-fired plants had to switch to expensive distillates to maintain the electricity supply. To limit losses for utilities and pass the fuel costs on to end users in a sustainable manner, Suruhanjaya Tenaga (the Energy Commission of Malaysia) established a plan to phase out gas subsidies, addressing the fuel supply problem in Malaysia. The most recent reforms concerning the Malaysian Electricity Supply Industry (MESI) are dated back in 2014, whereby the implementation of Incentive Based Regulation (IBR) resulted in an increase in electricity tariffs to cover the higher costs of domestic piped gas, coal and LNG.[57]
Saudi Arabia	Electricity and fossil fuel products subsidies are being reduced for the first time at about 30-60%, resulting in increasing prices of petrol, electricity and water. Saudi Arabia has high post-tax subsidies relative to their CO_2-emissions, because the government supports fossil fuel consumption with high pre-tax subsidies. The IEA reports that a third of the electricity in the Middle East is produced by oil-fired power plants, which burn over 2 million barrels of oil a day. Power generators in most Middle Eastern countries can purchase oil at artificially low, subsidised prices. Diesel and gasoline sold in Saudi Arabia are about 12% and 30% of international reference prices, respectively. Saudis enjoy the second lowest domestic fossil fuel prices in the world, behind only Venezuela.
Turkey	Turkey promotes a renewable energy support mechanism (YEK), according to which power plants that have come into operation

[57] High gas subsidies, expensive LNG and declining gas production has created a supply security problem for electricity industry in Malaysia where around 45% of electricity was generated from natural gas in 2013.

	between May 2005 and December 2015 are eligible for feed-in tariffs for the first 10 years of their operation. An additional premium is granted during the first five years if the mechanical or electrical equipment at the power plant is produced locally. Especially for hydro and wind investors, this premium is the element that gives the YEK mechanism an advantage in the spot market (in fact, the baseline feed-in tariffs are not very high).[58]

TABLE 6: INVESTMENT RESTRICTIONS

Country/region	Description
Vietnam	In recent years, Vietnam has been offering attractive investment opportunities. Foreign investors choose this country for its cheap labour, relative political stability and inclusion in the Trans-Pacific Partnership. Liberalisation of the market took place with the accession of Vietnam to the WTO in 2007. However, for a number of sectors, foreign investments are still restricted. Unlike other ASEAN (Association of South East Asian Nations) countries, Vietnam does not have a so-called 'negative list' of industries with a cap on foreign investments. But restrictions still apply to some industries that are referred to as 'conditional', among which are oil exploration, extraction and refinery as well as trading of energy and minerals. The government is entitled to examine the investment proposal in relation to such industries, and may choose to impose additional requirements. To set up a company operating in 'conditional industries', foreign investors need to obtain an investment certificate from the local government.[59]

[58] PwC, 2012: Turkey's Renewable Energy Sector from a Global Perspective, 11–13
[59] Shira, D et al: "Restrictions on Foreign Direct Investment in Vietnam", Vietnam Briefing, 2015, http://www.vietnam-briefing.com/news/restrictions-foreign-direct-investment-vietnam.html/

TABLE 7: ADMINISTRATIVE LICENSING

Country/region	Description
Canada	Jurisdictions limiting access to their transmission lines can also prove to be a barrier to a cost-efficient flow of goods. The case of the planned hydroelectric Lower Churchill Project in Labrador is illustrative of this issue. Québec refuses to grant access for electricity flowing from Labrador to the US, unless the power is sold to Québec. As a result, more expensive and less efficient alternating current lines bypassing Québec will have to be developed.[60]
France	In France, potential delays to the permitting phase are avoided by having only one national agency in charge of permits. Furthermore, in order to involve local communities in the planned projects, débats publiques are held in advance of the permitting phase, where information on the project is shared and discussed with all relevant stakeholders.
Italy	In Italy, lengthy and complex administrative procedures constitute barriers to both domestic and foreign investments. The permitting phase is usually too long and fragmented, with the need to involve a variety of agencies and bodies responsible for parts of the procedure. Some transmission lines have been under construction for more than 20 years due to recurrent cases submitted to the regional administrative courts of justice (TAR). The Trans Adriatic Pipeline (TAP), the gas pipeline running through Greece, Albania and the southern region of Puglia in Italy, provides another example. Italy is the last country to have granted the Single Authorisation Permit that allows TAP to start the pipeline construction in 2016.[61] Engagement with local communities is also an issue. For example, the discussion over the repatriation of nuclear waste from France and the United Kingdom has been pending since an appeal was made to the regional court in 2003.[62]

[60] Project Gutenberg: Lower Churchill Project, http://self.gutenberg.org/articles/lower_churchill_project
[61] TAP: “Italian Ministry of Economic Development issues Single Authorisation Permit for TAP in Italy”, TAP, 2015, http://www.tap-ag.com/news-and-events/2015/05/20/italian-ministry-of-economic-development-issues-single-authorisation-permit-for-tap-in-italy
[62] Povoledo, E: “Small town in south wins a reprieve: Italy delays decision on nuclear waste site”, The New York Times, 2003, http://www.nytimes.com/2003/11/28/news/28iht-nuke_ed3_.html and World Nuclear: “Nuclear Power in Italy”, World Nuclear, 2014, http://www.world-nuclear.org/info/Country-Profiles/Countries-G-N/Italy/

TABLE 8: PROCESS AND PRODUCTION METHODS

Country/region	Description
Canada and the United States	In Canada and the US, a number of restrictions on the use of oil products manufactured from tar sands are in place. This discrimination is based solely on source production. In this regard, the lack of approval of the Keystone XL pipelines is a key example. TransCanada Corporation, the company owning the project, is pursuing legal action against the Obama administration vis-à-vis its refusal to issue a border-crossing permit. On the basis of the NAFTA, the company intends to initiate an international arbitration against the US to repeal the "arbitrary and unjustified" denial of a presidential permit for the pipeline.[63]
Europe	The Fuel Quality Directive (FQD, Directive 98/70/EC amended by Directive 2009/30/EC) sets a target to reduce the carbon intensity of transport fuels by 6% by 2020. Under the FQD, fuel suppliers are required to report on GHG emissions using default values that are associated with the whole lifecycle of the transport fuel (extraction, refining, transport and combustion). Such default values are based on industry averages and differentiate mainly among the feedstock of origin. Originally, the European Commission wrote the regulation around an EU fuel poor average, with an explicit exclusion of oil sands, coal to liquid and a few other crude sources. However, this approach was challenged and as a result, the directive does not, per se, explicitly prohibit any fuel, high- or low-carbon, from accessing the EU market. However, the measures can be seen as actively influencing the dynamics of the EU fuel market and, through the use of lifecycle GHG thresholds, acting as a 'gatekeeper', favouring some fuels over others. Recently, the EU finalised the implementing measure for the FQD in a way that does not, in effect, distinguish between various different fossil fuel feedstocks at anything other than an aggregate, EU-wide average level (thus de facto removing the incentive for individual fuel marketers to distinguish various crude oil feedstocks on the basis of their carbon intensity).

[63] King, C and Mauldin, W: "TransCanada Starts Legal Actions Over Keystone XL Pipeline Denial", The Wall Street Journal, 2016, http://www.wsj.com/articles/transcanada-starts-legal-actions-over-keystone-xl-pipeline-denial-1452120281

TABLE 9: EXPORT PROHIBITIONS AND LIMITATIONS

Country/region	Description
China	There are a number of WTO cases concerning China's export duties and quotas on raw materials and rare earth minerals, vital to renewable energy technology. China's export restrictions on rare earth elements (REEs) are an example of unfair trade practices, as in 2010 the country produced 97% of the world's REEs and charged a 10% export tariff. That year, China cut its exports of REEs by 40%, causing global demand to exceed supplies. By pointing to proposed federal incentives for the US clean energy industry as comparable subsidies, China's government denied the allegations that its restrictions were inconsistent with WTO rules and that they constituted unfair trade practices. For a second time in 2013, the WTO ruled against China's export restrictions on REEs.[64]

[64] Campbell R, 2014: China and the United States – A Comparison of Green Energy Programs and Policies, 16

LIST OF ACRONYMS

Agreement on Trade Facilitation	ATF
Asia-Pacific Economic Cooperation	APEC
Association of Southeast Asian Nations	ASEAN
Carbon capture and storage	CCS
Conference of the Parties	COP
Conformity assessment procedures	CAPs
Customs Modernization and Tariff Act	CMTA
Environmental Goods Agreement	EGA
Excise Movement and Control System	EMCS
Feed-in Tariffs	FiTs
Foreign direct investment	FDI
Free Trade Agreement	FTA
Fuel Quality Directive	FQD
General Agreement on Tariffs and Trade	GATT
Government Procurement Agreement	GPA
Greenhouse gas	GHG
Intellectual property rights	IPR
Intellectual property	IP
International Organization for Standardization	ISO
Local content requirements	LCRs
Non-tariff measures	NTMs
North American Free Trade Agreement	NAFTA
Organisation for Economic Co-operation and Development	OECD
Photovoltaic	PV
Pre-shipment inspection	PSI
Process and production methods	PPMs
Rare earth elements	REEs
Research and development	R&D
Rules of Trade and Investment	RTI
Small- and medium-sized enterprises	SMEs
State-owned enterprises	SOEs
System for Exchange of Excise Data	SEED
Technical barriers to trade	TBT
Trans Adriatic Pipeline	TAP
Trans-Pacific Partnership	TPP
United Nations Conference on Trade and Development	UNCTAD
Value added tax	VAT
World Trade Organization	WTO

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