MEXICO'S ENERGY SECTOR UNDER THE UNIVERSAL PRINCIPLES OF THE 2015 INTERNATIONAL ENERGY CHARTER

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ENERGY CHARTER SECRETARIAT KNOWLEDGE CENTRE
2016
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FOREWORD

The essence of the Energy Charter process and its landmark impact on the decade of the 1990s have shown a path to foster international cooperation in the energy sector. Under the cornerstone concept of national sovereignty, different governments across the world with diverse perspectives and ideas on how to develop their energy sectors have been able to implement international cooperation within the framework of their own energy policies, promoting their integration into the global energy markets. The recent climate agreement reached in Paris (COP21) only confirms that energy transition is at heart of international relations for decades to come.

Mexico is, at the same time, a leader for Latin America and the gate of North America for the rest of the continent. Mexico is also a key reference for all new, emerging, and powerful economies across the world. It is not surprising to see that Mexico, one of the Pacific Pumas, has initiated a process of modernisation and internationalisation of its energy sector at the same time that the Energy Charter has embraced its own process of transformation under the International Energy Charter, which was signed in May 2015 by, so far, 79 countries from all continents.

Mexican energy reform has not limited itself to the modification of regulations for private parties to invest in the oil and gas industries, but also has a much deeper perspective. The reform has crafted clear and transparent rules for the participation of national and international private and public parties in the assignment of oil and gas blocks, has defined the faculties of the regulatory agencies, and has strengthened their independence, among other sectorial structural measures. On a policy level, the reform has embraced the concept of sustainable development and promotes and supports the generation of energy from renewable sources. It also modifies the paradigms that direct decisions on the energy mix to a more diverse portfolio of generation, for the improvement of energy security including measures for energy efficiency.

All of those key concepts that inspire and guide Mexican energy reform are very valuable interpretations and developments of universal values and principles that are present in the 2015 International Energy Charter. This is precisely the objective of this report, to present the national reform under universal principles, for the benefit of both the Mexican energy sector as an area of outstanding economic opportunity and social development and also for the Energy Charter as a part of the global
architecture for good governance of the energy sector. This report aims to provide useful insights and a basis of common understanding in the path of Mexico to become an observer of the Energy Charter by signing the 2015 International Energy Charter.

On the other hand, I would like to thank the Diplomatic Mission of Mexico in Brussels, which very kindly has supported and provided input to this document, for their inside knowledge and suggestions to improve it. It is also my pleasure to say that this report is part of the output produced by the young, knowledgeable and motivated Latin American team that has been present at the Energy Charter Secretariat over the last few months.

It is therefore my great pleasure to present to you this useful report. I am confident that it will contribute to deeper involvement and soon observership of Mexico within the Energy Charter Process.

Dr Urban Rusnák  
Secretary General
Executive Summary

The purpose of this study is to analyse the development of the recent energy reform in Mexico and its relation with the international standards that have been developed for the energy industry. A manifestation of those standards has been expressed by the International Energy Charter, signed on May of 2015. More than 79 countries have so far agreed on the importance of the development of sustainable energy markets, where there is an improvement of energy security and efficiency in all areas of the sector in a mode that is economically, socially and environmentally viable.

After many decades of having a closed market for private initiative and foreign investment in the energy sector, Mexico has decided to welcome foreign capital, knowledge and technology to unlock its energy potential. Under a framework underpinned by constitutional, legal and institutional reform, the Mexican government has established a new regime for the participation of private parties in the hydrocarbon and electricity markets. Backed with political momentum, the main parties agreed to re-launch the energy sector under an expression of national sovereignty over their natural resources, with contracts that maintain the ownership of natural resources for the nation but allow the development of such resources. This is particularly important for the development of deep-water deposits, unconventional hydrocarbons, and for the modernisation and expansion of the electricity market and infrastructure for the benefit the Mexican population.

The creation of stable and solid rules for the access to hydrocarbon blocks, the separation of the national oil company from any regulatory role, and the liberalisation of the electricity market are examples of the transformation on a legislative and administrative level. Another example is the understanding of energy security as an element for the control over natural resources, more than only a tool for achieving self-sufficiency in the energy mix. These examples show that the mindset of policy makers in Mexico is aligned with the global standards and objectives of the International Energy Charter.

This innovative perspective, to elaborate long-term policy planning and to improve the diversification of the energy mix, has opened the doors to this North American country to other sources such as renewable, nuclear or geo-thermal energy. This aspect also provides the foundation for the development of a policy perspective that is more aligned with the objectives of sustainable development and low carbon economy, which are now the basis of the global energy transition as agreed in December 2015 in the COP21 in Paris.
The alignment of the principles and ideas that have driven Mexican energy reform and the concepts expressed in the 2015 International Energy Charter is the key focus of this study. It will allow the reader to have an understanding on how the universal concepts developed under the Energy Charter Process benefit from the particular national development and implementation in the modernisation and transformation of Mexico energy sector. Should Mexico decide to sign the 2015 International Energy Charter, it would not only send a strong signal to investors by explicitly embracing global standards of good governance, but, in turn, the global architecture of the Energy Charter is based on a level playing field and the rule of law, and the valuable input and experience in those areas would benefit Mexico.
1. Introduction

Mexican energy reform is one of the most impressive in the recent history of the Latin American region. As a part of a structural transformation in line with international trends, and after 70 years of energy sector monopoly, Mexico has opened the energy industry to private investors. The admission of new stakeholders to the energy market process was conceived to diversify the risks of the industry, which fell under the responsibility of only a few public authorities like PEMEX before the reform\(^1\). International oil and gas companies currently have the chance to submit bids for oil production blocks, including deep-water exploration and unconventional resources blocks. Renewable energies have the opportunity to emerge and compete with traditional resources as the government implements a wholesale electricity market system. Increased oil exports and natural gas imports in competitive frameworks are expected to enhance Mexican economic potential, through job creation and price reduction. The investments in the energy sector are estimated to contribute 1% growth to the Gross Domestic Product by 2018 and 2% by 2025, and the creation of nearly half a million jobs in the next five years and two and a half million jobs by 2025\(^2\). In comparison with the previous energy policy, where the sector was dominated by government owned companies, the new strategy deserves to be regarded as a revolution in the Mexican energy sector.

The reform of energy in Mexico takes place at a time when concerns about energy sectors are acquiring a global dimension. In September 2015 the United Nations adopted in New York a 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals. Goal number 7 aims to ensure access to affordable, reliable, sustainable and modern energy. Goal number 13 encourages combating climate change and its impacts. Moreover, during the 21st Conference of Parties to the United Nations Framework Convention on Climate Change (COP21) in Paris in December 2015, more than 190 countries reached a global agreement to address global warming issues by limiting the average temperature increase to 2°C. The Paris Agreement sends a clear signal to investors, businesses, and policy-makers about the


global transition to clean energy. By providing a transparent, stable and predictable framework in the long term, the Energy Charter enhances the rule of law in the transition to a global and sustainable energy model.

On the other hand, the adoption of the International Energy Charter at the Ministerial Conference on 20/21 May 2015 in The Hague, Netherlands, which has been so far signed by 79 countries from all continents and international organisations, including the EU and ECOWAS\(^3\), provides common principles and a benchmark for good governance for a global energy sector. The International Energy Charter builds energy cooperation among all energy producing, consuming, and transit countries, with developed and emerging economies, in order to face common challenges at the regional and international levels. It also promotes the development of regional and global energy markets based on the principles of non-discrimination and market oriented price-formation. Additionally, it emphasises the importance that technology and research have for further energy development. These and other features of global energy reform are embedded in the International Energy Charter.

The Energy Charter Treaty is part of an international effort to build a legal foundation for energy security, based on the principles of open, competitive markets and sustainable development, with a multilateral framework for energy cooperation, while acknowledging sovereignty over energy resources. To date the Treaty has been signed or acceded to by more than 50 countries, including the European Union as a whole. The Treaty has provisions on energy investment promotion and protection, trade and transit, energy efficiency and dispute settlement. These rules are legally binding for member states. By contrast, the 2015 International Energy Charter is a declaration of political intention with no legally binding obligations or financial commitments.

The objective of this research paper is to examine the relevance of the 2015 International Energy Charter for Mexico. This is analysed by looking into some fundamental principles included in the 2015 International Energy Charter: national energy sovereignty, energy security, open markets, technology transfer, sustainable energy, regional and international frameworks, and investment protection. Each section introduces the principle of the 2015 International Energy Charter and then the national approach in Mexico is presented. The objective is to analyse the Mexican

\(^3\) Economic Community of West African States.
energy reform from the perspective of the universal principles of the 2015 International Energy Charter. This will allow a conclusion on the convenience and benefits for Mexico of signing the 2015 International Energy Charter. Those benefits are not to be only national, but also regional and international.

2. National Energy Sovereignty

The 2015 International Energy Charter explicitly recognises the sovereignty of each government over its energy resources and its right to regulate energy transmission and transportation within its own territory, respecting all relevant international obligations. In the spirit of political and economic cooperation, signatories agree to promote the development of efficient, stable and transparent energy markets at regional and global levels, taking into account environmental concerns and the role of energy in each country’s national development. To this end, signatories agree to take coordinated action to achieve greater coherence of energy policies, which should be based on the principle of non-discrimination and on market-oriented price formation.

2.1 Mexican Constitutional Reform

A constitutional reform bill was introduced in Mexico on 20 December 2013 to provide legal grounds for the economic liberalisation of energy resources. In the new framework, private parties are welcome to invest and make profit out of the exploitation of natural resources. The reform does not include the transfer of ownership of the resources to private companies, instead it creates a system under which it shares on the profits obtained from the business after agreeing on a contract. According to the new framework set in the Mexican constitution, the country retains inalienable ownership over natural resources. The reform aims to attract national and foreign capital to the energy industry, but also intends to comply with sovereignty over natural resources. The capacity to autonomously decide on energy policy is an essential element of sovereignty. The 2015 International Energy Charter endorses the sovereignty of governments over energy resources.

The constitutional reform primarily changed articles 25, 27 and 28 of the Mexican constitution. The 6th paragraph of article 27 referred to the constitutional structure of hydrocarbon and electricity regulation, as follows:

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International Energy Charter.
In the case of petroleum and solid, liquid or gaseous hydrocarbons, or of radioactive minerals, neither concessions nor contracts shall be granted (...) It pertains exclusively to the Nation to produce, conduct, transform, distribute and supply electric power to provide a public service. In this matter no concessions shall be granted to private persons, and the Nation shall apply the goods and natural resources required to serve such purpose.

The above mentioned paragraph was replaced by a new mandate that embraces the prohibition of granting concessions over energy resources, but allows the private sector to be granted contracts in both hydrocarbons and electricity. The new constitutional text, regarding electricity, has been defined under the following terms:

It is exclusive responsibility of the Nation to plan and control the national electricity system and the public service of transmission and distribution of electricity; in these activities no concessions will be granted, subject to the government to enter into contracts with private parties under the terms established by law, same situation will determine the way in which individuals may participate in the other activities of the electricity industry.

An entirely new 7th paragraph was introduced to abolish the prohibition on granting contracts to private parties related to hydrocarbon industrial activities:

In the case of petroleum and solid, liquid or gaseous hydrocarbons, underground, oil property of the Nation is inalienable and imprescriptible and no concessions will be granted. In order to raise revenue for the government and contribute to long-term development of the Nation, it shall carry out the exploration and extraction of oil and other hydrocarbons through allocations to productive government enterprises or through contracts with them or privates, under the terms of the Regulatory Law. To meet the object of such assignments or contracts, productive government enterprises may contract with individuals.

The reform also envisaged an industrial restructuring. The government owned oil company, PEMEX, was transformed into a ‘government productive enterprise’ aiming to transform it into a world-class competitive company. PEMEX holds exploration and extraction as strategic activities that can be granted to private actors through contracts. New regulatory functions were assigned to the CNH (National Commission of Hydrocarbons)\(^5\) and the CRE (Regulatory Commission of Energy)\(^6\). The energy reform initiative introduced nine new laws and twelve laws were reformed, as published in the Official Journal on 11 August 2014. In addition, 25 decrees were issued, as published in the Official Journal on 31 August 2014.

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\(^5\) Founded in 2008.

Monopolies are prohibited by article 28 of the constitution, while the 4th paragraph specifies strategic activities assumed exclusively by the government that are not considered monopolies, including the transmission and distribution of electricity and the exploration and extraction of oil and other hydrocarbons. This paragraph was reformed to make clear that the activities related to hydrocarbons and electricity should be interpreted systematically with article 27 of the constitution. Regarding nuclear energy, the constitution rules that only the government can use and regulate nuclear fuels.

Mexico has historically been sensitive to the liberalisation of the economy. The oil market, in particular, has been a part of the national identity since the nationalisation measures taken in 1938 and creation of PEMEX. The current reforms obey the purpose of the Mexican government to develop the expertise of PEMEX for the extraction of resources with pioneering technologies. Such are the cases of shale gas, deep-water oil exploration, and other unconventional hydrocarbons. The Mexican strategy is based on building partnerships with private companies that can provide cutting-edge infrastructure and expertise without transferring ownership of natural resources, as in the case of concessions. This policy was autonomously decided by the Mexican government without international or foreign coercion. Therefore, in strict legal terms, the adoption of the new rules was a manifestation of sovereignty instead of sovereignty deterioration.

### 2.2 Mexican Energy Strategy

The adoption of a new energy policy in Mexico was promoted by the current national government and endorsed by the three main political parties of the country (the Partido de la Revolución Democrática (PRD), Partido Revolucionario Institucional (PRI) and Partido Acción Nacional (PAN)). The main political agreements were established in a document entitled ‘Pacto por México’ (Pact for Mexico) in 2012. The
new political approach to the national economy finds its motivation in the fact that oligopolies are common in Mexico, and the objective of the pact was to introduce competitiveness in all economic sectors, including energy. Regarding energy, the pact listed four commitments: hydrocarbons will remain the property of the nation; PEMEX will be transformed into an income generating company; the exploration and production of hydrocarbons will be increased; and there will be competition in the refining process, petrochemical industry and hydrocarbon transportation. This reforms package was part of a political agenda in former presidential administrations that was not sound enough\(^\text{10}\). The result is a state that is strengthened as an economic policy maker, and not only as an energy producer\(^\text{11}\).

The commitments of the pact were incorporated in 2013 in the National Development Plan 2013-2018\(^\text{12}\). The National Energy Strategy 2013-2027, ratified by decree of 21 May 2013 by the Congress\(^\text{13}\), introduced more particular ambitions. This document states that GDP is growing faster than primary energy production and this tendency might drive Mexico to a structural energy deficit by 2020. The National Energy Strategy outlines four policy measures that emphasise energy supply and aim to achieve growth of the economy and social inclusion, by an increase of electricity supply at affordable prices.

The first policy measure is the enhancement of transport, storage and distribution infrastructure. Currently, the energy transport systems are obsolete. They have insufficient capacity and more alternative supply routes are needed to ensure quality and continuity of service. The increasing demand for gas coming from the United States to generate electricity in Mexico has saturated existing gas pipelines and gives urgency to upgrade these facilities.

The second policy measure relates to refining, processing and generation. The increasing demand for energy and the high production costs in Mexico have caused high energy prices. The country is changing energy generation from oil to gas since it is currently more cost-effective, but it also needs diversification of energy supply to prevent becoming a gas-dependent economy.


\(^{11}\) op. cit. Francisco Salazar. Pg. 267.


The third policy measure addresses oil production, which has dramatically fallen over the last 10 years due to the low production of oil fields. These mature fields do not require aggressive extraction techniques, but recent exploration efforts successfully discovered significant oil resources that need complex intervention. This is the case of deep-water drilling, shale oil and gas. The prolongation of oil production in mature wells also demands new technology.

The fourth policy measure concerns energy transition and the promotion of energy efficiency. In order to reduce the dependence on oil as a primary source of energy, the country plans to strengthen the extraction of their own gas resources, explore renewable energy sources and assess the production of energy from nuclear fusion.

The National Energy Strategy 2013-2027 also outlines three integration elements: energy sustainability, energy and environmental efficiency, and energy security. In contrast to policy measures, these integration elements are transversal. Energy sustainability emphasises the importance of constantly renewing the energy system to make consumption more efficient. Energy and environmental efficiency aim to implement the best practices in energy production and consumption. Energy security stands for preserving energy surplus and anticipating risks related to the continuity of energy production and supply.

The National Energy Strategy 2014-2028 states that the 2013 Strategy is a long-term energy policy and is consistent with the policy measures stated. The 2014-2028 policy document contains valuable elements reflecting the government’s views. The mission of this strategy is to identify the conditions for greater access and a reliable supply of energy, boosting the development of the productive sector and the population. The ‘transformation areas’ described in the National Energy Strategy 2014-2028 are: acceleration of the process of investment; greater diversification of projects; elimination of bottlenecks (market barriers) and improving efficiency; promoting social inclusion; and strengthening of institutions.14

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3. Energy Security

The 2015 International Energy Charter recognises the importance of energy security, a concept that embraces the needs of energy producing, transit and consuming countries, regardless of their state of economic development, as well as access to modern energy services that is based on environmentally sound, socially acceptable and economically viable policies, with emphasis on mutual responsibilities and benefits. Acknowledging that enhanced energy trade is a powerful catalyst for strengthening regional and international cooperation in energy security. The signatories are desirous of sustainable energy development, improving energy security and maximising the efficiency of production, conversion, transport, distribution and use of energy, to enhance safety, promoting the realisation of infrastructure projects important for providing global and regional energy security. In addition to this, signatories highlight the importance of diverse energy sources and supply routes to enhance energy security.\(^\text{15}\) [Emphasis added]

3.1 Energy Production and Consumption

Primary energy production in Mexico diminished by an average of 0.3% per year between 2000 and 2011, while energy consumption grew in average 2.08% per year in the same period of time. If these tendencies continue, Mexico will no longer be an energy self-sufficient country and will depend on external resources in 2020, according to the National Energy Strategy 2013-2027.

Table 1: Energy Key Balances for Mexico

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total primary energy supply (Mtoe)</td>
<td>144.81</td>
<td>149.17</td>
<td>160.82</td>
<td>170.88</td>
<td>180.84</td>
<td>176.27</td>
<td>188.66</td>
<td>189.35</td>
</tr>
<tr>
<td>Energy production (Mtoe)</td>
<td>222.11</td>
<td>229.08</td>
<td>250.44</td>
<td>247.34</td>
<td>231.54</td>
<td>222.19</td>
<td>218.98</td>
<td>211.55</td>
</tr>
<tr>
<td>Net imports (Mtoe)</td>
<td>-71.64</td>
<td>-75.84</td>
<td>-85.93</td>
<td>-72.39</td>
<td>-45.38</td>
<td>-39.98</td>
<td>-22.62</td>
<td>-17.2</td>
</tr>
<tr>
<td>Electricity generation (TWh)</td>
<td>204.18</td>
<td>215.88</td>
<td>232.64</td>
<td>249.5</td>
<td>261.92</td>
<td>271.05</td>
<td>293.86</td>
<td>300.45</td>
</tr>
<tr>
<td>Electricity consumption (TWh)</td>
<td>176.57</td>
<td>185.16</td>
<td>196.78</td>
<td>209.13</td>
<td>219.41</td>
<td>225.85</td>
<td>248.69</td>
<td>257.7</td>
</tr>
<tr>
<td>Total final consumption (Mtoe)</td>
<td>98.28</td>
<td>97.9</td>
<td>102.88</td>
<td>109.93</td>
<td>115.07</td>
<td>113.61</td>
<td>117.01</td>
<td>NA</td>
</tr>
</tbody>
</table>

\(^{15}\) International Energy Charter.
As seen in this chart, energy production has not improved as steadily as the total primary energy supply has. This implies that the demand for energy is growing in the country, but also suggests a diminishing capacity to export energy and make profit. In consequence, Mexico has decreased its capacity as a net exporter of energy in order to cover the national demand.

To meet electricity generation demand, Mexico is investing in combined cycle generation plants based on natural gas. The country’s electricity generation depends on gas for approximately 55% and on oil for 15%\textsuperscript{16}. This solution seems affordable due to the relatively low prices of natural gas in recent years in the United States and the greater efficiency of these plants compared to those using petroleum.

Although investment in exploration and production of hydrocarbons increased from $4.5 billion USD in 2000 to $15 billion USD in 2012, oil production reached a peak in 2004 (almost 3.5 million barrels per day) and decreased in 2012 to 2.5 million barrels per day. Proved oil reserves fell as well, from 20 billion barrels of crude oil in 2003 to 13 billion barrels in 2012. This fall is significant if compared to the abundance of the decades of the 1980s and 1990s, when proved oil reserves typically remained around 50 billion barrels\textsuperscript{17}.

Regarding refined petroleum products, Mexico is a net importer of gasoline, diesel, jet fuel, natural gas, liquefied petroleum gas and petrochemicals. The capacity within the country to refine crude oil has diminished and the demand for gasoline, diesel and petrochemicals is increasing as a result of the growing number of industries and households needing these products\textsuperscript{18}.

\textsuperscript{16} The remaining 30% comes from hydro (11%), coal (10%), nuclear (4%), geothermal (2%) and wind energy (1%). Data from the International energy agency (2013).
\textsuperscript{17} U.S. Energy Information Administration. International Energy Statistics.
3.2 Long-term Energy Security

The National Energy Strategy 2013-2027 states that “energy self-sufficiency is not intended to maximise energy autonomy or to minimise dependence on external resources, but to allow control over energy resources”. Accordingly, Mexico will keep advocating for transnational trading of energy.

Broadly speaking, Mexico plans to rely more on electricity generation from natural gas, while investment in oil extraction will not for energy generation purposes only, but mainly for trading on international markets. There will be a greater demand for imported natural gas since the main investment in Mexico will go towards oil extraction, due to the higher margins of profitability in comparison to the natural gas market. On the other hand, electricity generation from natural gas is more cost-effective. Investments in infrastructure for natural gas transport and distribution will continue in order to enhance energy generation. The Secretary of Energy of Mexico (SENER) estimates electricity production from combined cycle plants will increase from 35.5% in 2014 to 43.5% in 2029. The use of conventional thermoelectric plants will diminish from 19.8% in 2014 to 2.7% partly because they will be converted to gas generation and the boost of renewable energies.

To achieve stable growth of oil production it is important to be supported by a continuous replenishment of proven reserves and the expansion of investments in unconventional extraction. Mexico plans to count on private investment to support oil extraction with unconventional methods, as PEMEX has traditionally focused on conventional fields and has limited experience regarding shale reservoirs and deep-water drilling. The new extraction projects are expected to halt the steady fall of oil production, and keep a rate of up to 3 million barrels per day going during the next 12 years. Without this strategy Mexico might only be producing 1 million barrels per day by 2026. The SENER presented a scenario of minimum and maximum performance for the oil sector between 2015 and 2029. The following chart exhibits the main aspects.

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19 Ibidem. Pg. 59.
21 Ibidem. Pg. 41.
Table 2. Prospective oil production

<table>
<thead>
<tr>
<th>Prospective 1 (Minimum)</th>
<th>Prospective 2 (Maximum)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2029</td>
</tr>
<tr>
<td><strong>Incorporation of new oil reserves</strong></td>
<td>107 mmbpce*</td>
</tr>
<tr>
<td><strong>Recovery rates</strong></td>
<td>9%</td>
</tr>
<tr>
<td><strong>Oil production</strong></td>
<td>2288 mbd</td>
</tr>
<tr>
<td><strong>Percentage of total production exported</strong></td>
<td>50.7%</td>
</tr>
</tbody>
</table>

*Millions of barrels of oil equivalent.


The assets that Mexico allocates to the oil sector are crucial for its public finances because the public budget is affected by oil production. The oil sector accounted for 11% of the country’s income for exports in 2014, and revenues for the government compose one-third of total government spending. Therefore, diversification of electricity production and diminishing electricity generation from oil are crucial for Mexico.

The enlargement of public spending on energy diversification has not been a priority in Mexico because local rules encourage energy planning on the ‘minimum cost principle’. If this principle continues to be applied, Mexico might become gas-dependent in the future for the generation of electricity, and energy security might be seriously affected if the international prices of natural gas rise. Thus, the country will incorporate the risks associated to the security of supply into energy prices and will monitor the international prices of natural gas, among other relevant resources, in case adjustments should be applied.

Other measures to diminish energy-associated risk are the construction of facilities for energy storage and the allocation of funding for energy infrastructure. The country also intends to increase the capacity and profitability of refining oil sub-

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23 Ibidem. Pg. 34.
products and develop the petrochemical industry, so as to reduce the dependence on imports of refined petroleum products\textsuperscript{24}.

As seen, Mexico aims to secure access to economically viable modern energy services and maximise energy production as it is promoted in the 2015 International Energy Charter. Moreover, the 2015 International Energy Charter, under the principle of energy security, asserts that energy trade strengthens regional cooperation in energy security. This approach to energy security is interesting for Mexico because it addresses the issue of energy security from an international perspective.

\section*{4. Open Energy and Technological Transfer}

\begin{quote}
Under the 2015 International Energy Charter, open markets refers to the liberalisation of the energy sector, and signatories agree to participate in joint efforts to facilitate and promote market-oriented reforms and modernisation of the energy sector. The signatories also agree to promote open and competitive markets for energy products, materials, equipment and services, as well as remove barriers to energy trade in a manner that is consistent with the provisions of the WTO Agreement and other international obligations. The signatories understand liberalisation not an obligation, but a principle that countries are encouraged to develop according to their national sovereignty and national strategy\textsuperscript{25}. [Emphasis added]
\end{quote}

\subsection*{4.1 Hydrocarbons Sector}

Mexico is ranked among the top ten oil producers in the world and is the second largest in Latin America, producing an average of 2.8 million barrels per day (b/d) of petroleum and other liquids during 2014 and having 9.8 billion barrels of proved oil reserves by the end of the same year. Furthermore, Mexico had 17 trillion cubic feet (Tcf) of proved natural gas reserves at year-end 2014, has one of the world's largest shale gas resource bases and is among the top 20 natural gas producers in the world\textsuperscript{26}. Discoveries carried out in 2013 verify the oil potential in deep water and in the basins of the Mexican southeast. The Kunah-1DL, Supremus-1 and Trion-1 fields

\begin{footnotes}
\item[24] Ibidem. Pg. 37.
\item[25] International Energy Charter.
\end{footnotes}
are among the promising exploration results of the year. Also, early in 2013, Mexico produced for the first time 400 barrels per day of shale oil from the Anhélido 1 well\textsuperscript{27}.

From 1938 to 2013, exploration and exploitation activities were the exclusive domain of the National Oil Company (NOC). Article 27 of the Constitution of Mexico prohibited the state to grant contracts to private parties for these activities, while giving full control to the government oil company PEMEX. PEMEX was allowed to agree on service contracts with private parties. Notwithstanding Mexico’s great reserves, the production of crude oil and refined products has been decreasing in recent years as a consequence of the lack of technical, financial and implementation capacity to produce oil and gas at the same pace as other countries with similar natural resources\textsuperscript{28}.

In this context, the unprecedented constitutional reform of 2013 pursued the liberalisation of the energy sector. It opened the market to private investment so as to increase the efficiency of the energy industry, lowering its costs and thereby reducing prices for the final consumer\textsuperscript{29}. In this sense, Mexico opened its hydrocarbon sector to the direct participation of private capital after decades of being run by PEMEX, which remains as a productive state-owned company and will continue to participate in the sector.

Hence, new players in the hydrocarbon sector are to contribute to maximising oil revenues following the new rules for efficient use of the national resources. The objective is that the energy reform will "increase oil production from 2.5 million b/d in 2014 to 3 million b/d by 2018, and to 3.5 million b/d by 2025, as well as natural gas production from 5.7bcf/d to 8bcf/d by 2018, and to 10.4bcf/d by 2025, considering both PEMEX and the private sector"\textsuperscript{30}.

Effectively, the new Hydrocarbons Law (Ley de Hidrocarburos), entered into force since 12 August 2014, allows the Mexican government to enter into contracts with the private sector (in association or not with PEMEX), for the exploration, exploitation and production of hydrocarbons. These contracts between private parties and the Mexican government will be governed under the federal laws of Mexico and might

\textsuperscript{27} National Energy Strategy 2014-2028. Mexico, February 2014. Pg. 11.
\textsuperscript{28} Reforma Energética, Mexico. http://cdn.reformaenergetica.gob.mx/explicacion.pdf
be described in four different ways: service contracts, profit sharing contracts, production sharing contracts and license contracts\(^{31}\).

Hence, reform in the hydrocarbon sector welcomes foreign investment, leading to a set of rounds of auctions to award oil exploration blocks to investors, in a public and transparent way. Foreign investors can perform activities related to oil and gas as long as they incorporate companies under the Mexican rules.

Furthermore, the petrochemicals market will also open to private investors. Gasoline and liquefied petroleum gas will be commercialised under private brands and not only under PEMEX. According to the fourteenth transitory article of the Hydrocarbons Law, the prices of gasoline and diesel will gradually open: from 2015 until 2017 the regulation on cap prices will be determined by decree of the executive branch, and after January 2018 prices will be determined by the market. Also, from January, 2017 public and private parties can obtain a permit to import gasoline and diesel. For liquefied petroleum gas the cap prices will be liberalised from January 2017, after the implementation of an aid program for consumers of liquefied gas petroleum. Likewise, according to the twenty-ninth transitory article of the Hydrocarbons Law, public and private parties can obtain a permit to import liquefied gas petroleum from January 2016. The Secretary of Finances (Secretaría de Hacienda) proposed to liberalise the prices of gasoline and diesel for 2016\(^{32}\).

In any case, Mexico retains ownership of the hydrocarbons in the subsoil and supervises activities in all stages of the energy process. The role of Mexico’s SENER is essential in order to guarantee energy security, managing the country’s oil and gas reserves and promoting investment. Additionally, the Energy Regulatory Commission (CRE) and National Hydrocarbon Commission (CNH) have regulatory authority over the oil and natural gas sectors. The CRE is the government body in charge of regulating the activities of the energy industry. The CNH regulates, supervises and regulates the hydrocarbons exploration and extraction activities. Also, the National Centre of Natural Gas Control (CENAGAS) will manage and coordinate the pipeline network and gas storage. Moreover, the National Agency for Industrial Safety and Environmental Protection of the Hydrocarbons’ Sector (Agencia de Seguridad, Energía y Ambiente - ASEA) was created and will be responsible of the regulation

\(^{31}\) Ibidem.
and supervision of this aspect of the hydrocarbon industry. Finally, the management of contract payments and oil revenues will be done by the new Mexican Petroleum Fund (Fondo Mexicano del Petróleo para la Estabilización y el Desarrollo).

The reform of the hydrocarbon sector is in line with the principle of open markets found in the 2015 International Energy Charter. Its Title 1(1) establishes that the signatories will develop the trade of energy by means of open and competitive markets in regard to energy products, materials, equipment and services and allow access to energy resources. The current energy sector of Mexico allows access to energy resources on a commercial basis, providing transparency and legal certainty through the new regulations and entities that were created under an international basis to control the national energy system.

### 4.2 Oil Rounds

The Mexican government foresees oil production reaching 3 million barrels per day in 2018 and 3.5 in 2025. In the case of natural gas the production could reach 8 billion feet cubic per day in 2018 and 10.4 in 2025. In order to attract the needed national and international private investment to the Mexican oil and gas market, the government created geographic blocks which are to be put out in five different tenders containing shallow exploration blocks, shallow blocks with proven reserves, onshore conventional blocks, deep-water exploration blocks and unconventional blocks.

On 15 July 2015, Mexico introduced the first round of auctions to award oil exploration blocks to extraction companies. Mexico put out to tender 14 shallow exploration blocks, of which only two were adjudicated, to a consortium of Sierra Oil & Gas, Talos Energy LLC and Premier Oil PLC. Considering that the Mexican government aimed to award two-thirds parts of the blocks, this result was not up to the authorities’ expectations. The modification of the ‘adjustment mechanism’ was supposed to attract more participation. According to this mechanism, Mexico might get a greater share of the companies’ revenue if a project produces extraordinary profits. The threshold to qualify the profits as extraordinary was originally set at 15%.

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and raised to 20% to attract more bids, but the reconsideration of that proportion did not seem to have a significant impact on bid turnout. Bids for four of the blocks were disqualified because they did not meet the minimum requirements, set the same day of the auction.

According to participants, the poor geology of the blocks and the unappealing terms of the contracts were among the reasons for low turnout for the first tender. Also, the announcement of minimum bid requirements just before the bidding began was another discouraging element. The government attributed the poor outcome to the current low price of oil, but investors believed that Mexico is too afraid to let the market decide the price of the blocks. Despite the dilemmas during and after the first tender, these experiences were essential to tune the conditions for success in the second and third tenders.

In the second tender on 30 September 2015, three out of five blocks put out to tender were awarded with exceptional gains for Mexico. The first awarded block (Amoca, Mizton and Tecoalli fields) received nine bids and was conferred to the Italian company, ENI, which offered an 83.75% share on profits to Mexico, well above the 34.8% minimum required for contracting. Two other blocks (including the Hokchi, Ichalkil and Pokoch fields) were awarded to consortiums led by Pan American Energy (Argentina) and Fieldwood Energy (United States), who offered at least a 70% share in revenues. The final two blocks were not awarded due to insufficient bids.

Although optimal geology was a strong feature of the blocks awarded, the new settings introduced in the bidding process influenced the outcome. The bid’s minimum requirements were announced two weeks before the opening. The threshold for the adjustment mechanism was raised again, to 25%. These changes allowed Mexico to capture the attention of oil industry leaders such as Statoil, Lukoil, CNOOC and Petronas, apart from the ones mentioned above. Chevron and Royal Dutch Shell pre-qualified but did not submit bids. The first oil tender was the first attempt to attract massive private investment after more than 70 years of government monopoly. Despite the difficulties during the first tender, the success of the second tender shows that the reforms are fruitful and private companies have a

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large interest in Mexico, despite the current oil price situation. The second tender stands out for its transparency, consistency and clear set of rules.\(^{35}\)

It is reasonable to believe that the exploitation of these oil fields and the others still to be awarded will give a boost to the Mexican economy. The fields awarded in the second tender only, which should start producing in 2018, might produce 67,000 barrels per day during peak output in 2022-2024, and 90,000 barrels per day according to the Mexican Deputy Energy Minister.\(^{36}\) The Energy Minister expects these contracts to attract $3.1 billion USD in investments in the 25 years to come and $600 million USD just in the next three years.

The third tender followed the success of the second tender, given that the 100% of the 25 onshore hydrocarbon fields were awarded to 21 companies—18 from Mexico, two from the United States and 1 from Holland (the companies from the United States and Holland participated in consortiums with Mexican companies). Peak oil production might reach 77,000 barrels per day and investments could amount to $100 million USD.\(^{37}\)

The fourth and fifth blocks (deep-water exploration blocks and unconventional resources) are perhaps the biggest prize of all the tenders, and they might be highly appealing for international investors. After the second tender, Mexico has been positively portrayed and there is a convenient atmosphere for the oil tenders to come.\(^{38}\)

### 4.3 Electricity Sector

According to the National Energy Balance, Mexico’s electricity generation in 2014 was 1,092.15 petajoules, showing an increase of 2.1% compared to 2013.\(^{39}\) The

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\(^{36}\) FT. Mexico oil auction eases memory of previous sale flop. September 30, 2015.


\(^{38}\) Op. cit. The Revival of Mexico’s Oil Sector.

Energy and Economic Indicators at the mentioned Balance show that electricity consumption in 2014 was 241,255.54 (GWh)\textsuperscript{40}, equivalent to 868.52 petajoules.

A legal reform in 1992 allowed only a limited amount of private competitors in energy generation\textsuperscript{41}. Under the Mexican constitution reform of 2013, the electricity sector and market were restructured. Power generation is no longer reserved for government owned companies, and now private parties are allowed to generate and supply power in the wholesale electricity market\textsuperscript{42}.

The Mexican power company called the Federal Electricity Commission (CFE) will have to compete with private generators as a government-productive entity. CFE is an independent entity but depends on SENER. The CFE will be the operator for both the transmission and distribution of electricity, which will remain as a public service reserved to be provided by the government, and for the national electric system. However, this entity will be able to enter into contracts with private parties for the construction and operation of the national power grid.

Furthermore, the National Centre for Energy Control (CENACE), as a public entity, has the obligation to impartially coordinate the wholesale energy market to satisfy electricity demand at the lowest cost and provide stability to the electrical system\textsuperscript{43}. CENACE must plan and control the operation of the national electric system in coordination with the carriers and distributors, report any attempts by participants to manipulate the market, and inform CRE about necessary adjustments or amendments to the system, among other functions\textsuperscript{44}.

SENER will have the power to issue programs for the expansion of transmission and distribution grids, while the CRE will be responsible for the design and issue of the corresponding regulation. Likewise, CRE will grant authorisations for electricity generation, and will provide the rates for transmission and distribution of electricity.

\textsuperscript{40} Ibidem. Pg. 110.
\textsuperscript{41} op. cit. Francisco Salazar. Pgs. 263, 271.
\textsuperscript{42} SENER. Secondary law. Electricity sector
\textsuperscript{43} National Centre for Energy Control (CENACE). Who we are.
\textsuperscript{44} SENER. Secondary law. Electricity sector.
After the Electric Industry Law was issued on 11 August 2014\textsuperscript{45}, the sector has been facing an important transformation process. The Electric Market Guidelines, published on 8 September 2015\textsuperscript{46}, are a fundamental part of this process and they mainly establish principles for the design and operation of the new wholesale energy market (WEM)\textsuperscript{47}. The general principles included in the guidelines aim to transform the WEM into an efficient, reliable and competitive market, improving the quality of service to benefit the country and its consumers.

The guidelines are followed by manuals of market practices, operational guidelines, criteria and operating procedures. They are divided into 19 sections and cover various aspects of market structure and operation, including the registration, accreditation and requirements for market participants\textsuperscript{48}.

Market participants may enter the electric system as generators, marketers, suppliers, non-supplier marketers or qualified users\textsuperscript{49}. Market participants are able to enter into agreements with CENACE to purchase and sell electric energy, related services, power, clean energy certificates and other relevant products.

All participants, except non-supplier marketers, have to register and represent assets in the value chain when contracting with CENACE. Every participant contract has to determine one modality of market participation and if they will represent power plants and/or load centres.

Is important to note that CENACE will not have any liability in tariff regulation for suppliers, which must provide all the requirements of the load centres and of the exempt generators they represent. Also, suppliers and qualified users are allowed to

\textsuperscript{48} Ibidem. Pg. 4.
\textsuperscript{49} Generators: Represent power plants on the market; Marketers: Represent power plants and load centres included in interconnection legacy agreements on the market; Suppliers: Represent load centres on the market for the consumption of final users as basic supplier; qualified supplier or last resort supplier; Non-supplier marketers: Make market transactions without representing fixed assets, they will hold virtual transactions from 2018; Qualified users: Represent load centres as market participants or as represented by a supplier for their own consumption or for consumption within their premises. Ibidem. Pg. 8.
participate in medium- and long-term auctions which are agreements for purchase and sale of power and energy.

The constitutional reform and guidelines contemplate a coordinated effort between the gas and the electricity sector. Therefore, the increase of natural gas production and supply ensures the reduction in electricity tariffs. Also, the increase in natural gas use will reduce oil use in electric power generation.

Furthermore, an Electric Universal Service Fund was created to support national electrification in all territory, including rural communities and marginalised urban areas\textsuperscript{50}. Furthermore, Mexico’s electricity goals also include straightening border electricity interconnections with the U.S., taking into account that there are important interconnections used for permanent interchanges of energy or for emergency purposes\textsuperscript{51}. Moreover, Mexico expects to continue developing relations with Guatemala since there is high transmission capacity, and enhancing relations with the Electricity Interconnection System for the Central American countries (SIEPAC) towards the increase of operational reliability and greater energy security\textsuperscript{52}.

The above is in line with Title I of the International Energy Charter, as the current Mexican electricity sector encourages an open and competitive market for energy products, materials, equipment and services, i.e., electricity supply and generation is now subject to free competition. Also, current regulations for the mentioned sector allow access to energy resources in a commercial basis, providing transparency for all segments of international energy markets.

### 4.4 Technological Transfer

Under the \textit{2015 International Energy Charter}, signatory countries recognise the need to promote \textit{research and technological cooperation} among members. With this purpose in mind, they agree to cooperate to enhance capacity building among signatories and mutual access to technical and economic data, as consistent with proprietary rights, to facilitate the exchange of technological information and know-how in the energy and environmental sectors. They also agree to promote

\textsuperscript{50} SENER. Secondary law. Electricity sector  
http://www.energia.gob.mx/webSener/leyes_Secundarias/Ind_elect.html

http://www.sener.gob.mx/webSener/res/PE_y_DT/pub/Perfil_Energetico_II.pdf

\textsuperscript{52} Mesoamerican Project. Mexico - Guatemala Electric Interconnection.  
cooperation for further research and development activities, encourage pilot demonstration projects, as well as the application of technological innovations. In addition, signatory parties recognise the industry’s role in promoting vocational education and training in the energy sector and agree to cooperate in such activities, including: professional education, occupational training, and the dissemination of public information on energy efficiency and renewable energy. [Emphasis added]

The challenges in regard to energy efficiency in Mexico are particularly linked to technological development, because energy infrastructure urgently needs to be renewed. Also the production of energy is related to the use of new technologies since an important portion of oil and natural gas reserves needs to be extracted with cutting-edge techniques (like enhanced extraction and development of unconventional hydrocarbons). Renewable energy technologies are in an early stage as well. Additionally, the country is developing its petroleum refining industry, supporting clean fuel production and maximizing the value of processed oil. The PEMEX’s petrochemical infrastructure was developed using technology from the 1970s and 1980s that needs to be updated.

To face challenges in the areas of technology, innovation and research, Mexico plans to join forces with foreign allies. To increase oil production Mexico will cooperate with foreign industrial partners that have acquired experience in enhanced extraction and unconventional hydrocarbons, using the oil rounds as a platform, since PEMEX has traditionally relied on shallow oil fields that are already mature and most of the new oil and gas to extract are in areas of complex geology or in deep water. The ‘U.S.-Mexico Transboundary Hydrocarbons Agreement’, as well, aims to enable joint development of transboundary resources in the marine border of both countries. According to the National Energy Strategy 2013-2027 “equipment and technologies used for energy consumption and production are mostly of foreign origin. There are few examples of equipment competing in the domestic market that are result from our scientific and technological advancement or our patents”.

55 Ibidem. Pg. 41.
The Mexican Petroleum Fund, introduced in the reform, will also allocate resources for science, technology and innovation projects, and renewable energy. In 2013 the Secretary of Energy allocated approximately $88 million USD for the creation of a deep-water technology research centre, to develop and adapt technologies that support the offshore oil extraction strategy in Mexico. The development of enhanced recovery technologies is expected to increase the oil recovery factor by between 3% and 8%\(^{58}\). On the other hand, the contracts for exploration and extraction of hydrocarbons contain clauses for technology transfer, innovation, technological development, and training in oil and gas.

Another remarkable investment in technology is the creation of the Centros Mexicanos de Innovación en Energía (CEMIEs), that aim to build technological and scientific skills to develop the potential of renewable energies by gathering together private and public stakeholders. To date five CEMIEs have been conceived in the areas of bio, wind, geothermal, wave and solar energies, accounting for approximately $160 million USD investment. The CEMIEs can stimulate technology transfer in Mexico\(^{59}\).

The International Energy Charter promotes technical and technological cooperation among signatory countries. This cooperation may consist of technology transfers or cooperation for energy production, conversion, transport, distribution and renewable energies. The International Energy Charter is a bridge to access pioneering energy technology and research available in other signatory countries.

5. Sustainable Energy

The 2015 International Energy Charter recognises sustainability of the energy market in terms of utilisation of indigenous energy resources and the importance of renewable energy sources and energy efficiency. Signatories to the International Energy Charter acknowledge the importance of efficient systems in the production, conversion, transport, distribution and use of energy for energy security, poverty alleviation, and sustainable development for the protection of the environment. They also agree to promote a more sustainable energy mix to minimise the negative environment consequences in a cost-effective manner by sharing best practices on clean energy development and


investment. Moreover, signatory parties underline the importance of access to sustainable, modern, affordable, and cleaner energy.\textsuperscript{60} [Emphasis added]

### 5.1 Energy Efficiency

Energy efficiency includes all actions that lead to an economically viable reduction of the amount of energy needed to meet the energy demand for goods and services required by society, ensuring the same or greater level of quality and reducing the negative environmental impacts of the generation, distribution and consumption of energy. Its definition includes the transition to renewable energy sources.\textsuperscript{61}

The National Commission for Efficient Energy Use (CONUEE) is an agency of SENER created by the Law for the Sustainable Use of Energy published on 28 November 2008\textsuperscript{62}. Its main objective is to promote energy efficiency and serve as a technical body on the sustainable use of energy\textsuperscript{63}.

The National Energy Strategy of Mexico 2013-2027 has the mission to meet energy supply and demand in light of two strategic objectives: 1) enhance economic growth and 2) ensure energy access to all nationals, so they can receive benefits from efficient and responsible energy consumption. The mentioned strategic objectives are developed by three integration elements and four politic measures, supported by various lines of action which must be constantly updated to guarantee the national energy strategic mission\textsuperscript{64}.

The first integration element relates to sustainability, which seeks to maintain the flow of energy to consumers. It is mentioned that sustainability can be achieved by constantly expanding the range of primary energy, focusing on increasing the use of renewable energies.

The second element is related to energy efficiency, and seeks the continued application of the best available practices in the production and consumption of

\textsuperscript{60} International Energy Charter.
\textsuperscript{63} SENER. What is Conuee? http://www.conuee.gob.mx/wb/CONAE/what_is_conuee
energy. Efficiency not only optimises these two processes, but also minimises environmental impact.

In addition, the third element refers to energy security and the ability of the country to maintain an energy surplus and to provide certainty over the production activities. Also, it refers to the capability of anticipation, since the country must provide accessibility to markets, product placement and preventive storage.

Energy efficiency policy is in line with the National Program for Sustainable Use of Energy 2014-2018\(^{65}\). Some projects that develop this policy include the National Energy Efficiency Project in Municipal Public Lighting and the Business Savings Program and Energy Efficiency\(^{66}\).

To comply with the constitutional mandate of sustainability in the electric industry, the Electric Industry Law of 11 August 2014\(^{67}\) creates a scheme of obligations for qualified users and power companies to ensure that they gather clean energy certificates, guaranteeing clean energy generation. The certificate system permits different technologies and clean energy locations to compete to comply with the energy goals within the lower cost\(^ {68}\).

Additionally, clean energy generators would be allowed to interconnect without delays and without greater costs. Plans will consider the necessary infrastructure to generate energy from the zones where there is a high renewable potential\(^ {69}\).

Moreover, in relation to energy generation and other generation technologies, users can sell energy to the CFE at regulated prices or sell it to other suppliers at market prices. The users with controllable demand could be compensated for reducing the consumption in critical hours\(^ {70}\).

The National Energy Strategy of Mexico 2013-2027 establishes that energy efficiency, as an energy transition mechanism, brings economic, environmental and energy security benefits\(^ {71}\). The government recognises the importance of energy efficiency

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\(^{67}\) Electric Industry Law of 2014.

\(^{68}\) SENER. Secondary law. Electricity sector

\(^{69}\) Ibidem.

\(^{70}\) Ibidem.

regulations and confirms that Mexican energy reform pushes the development of new companies dedicated to improving efficiency\textsuperscript{72}.

On this regard, on 24 December 2015 the Energy Transition Law\textsuperscript{73} was published, complementing the Electric Industry Law, regulating the sustainable use of energy, establishing the need for the reduction of emissions, greater investments in clean energy, renewables and energy efficiency. To accomplish the above, the Transition Law establishes strategies, programs, measures and public policies for the next 15 and 30 years. In addition, the Law reinforces the functions of CONUEE and creates the National Institute of Electricity And Clean Energy (INEEL) to coordinate and execute clean energy studies and investigation projects.

In this sense, the Mexican reform and the regulations that develop it confirm those principles of the International Energy Charter which point out that investment in energy efficiency and renewable energies can enhance energy security and contribute to sustainable economic growth. The International Energy Charter\textsuperscript{74} and the National Energy Strategy 2013-2027\textsuperscript{75} aim for the formulation of stable and transparent legal frameworks that create conditions for the development of energy resources in the context of sustainable development, energy efficiency, environmental protection and sustainable and clean energy.

### 5.2 Renewable Energy Sources

The National Energy Strategy of Mexico 2013-2027 establishes that facing the environmental challenges for the use and generation of energy is one of its main goals\textsuperscript{76}. It is necessary to avoid and reduce environmental impacts and at the same time enhance economic growth, improving welfare and competitiveness. Hence, measures to accelerate the energy transition to renewables sources also increase energy security and allow the use of other natural resources, contributing to

\textsuperscript{72} Ibidem. Pg. 13.


\textsuperscript{74} Title I, article 3; Title II, article 7 of the 2015 International Energy Charter http://www.energycharter.org/fileadmin/DocumentsMedia/Legal/IEC_EN.pdf


\textsuperscript{76} National Energy Strategy 2013-2027. Mexico, February 2014. Pg. 3.
compliance with climate change goals. In this sense, the reform includes incentives to increase the use of renewables.

Energy transition is one of the four political measures guaranteed by the mission of the National Energy Strategy. It focuses on the promotion of energy efficiency and sustainability, to reduce dependence on oil as a primary source of energy. Moreover, Mexico has increased its efforts to promote the use of renewable energy sources and clean technologies to generate electricity.

Additionally, Mexico has the goal to increase the percentage of non-fossil sources in the portfolio of primary electricity generation by at least 35% by 2024. Renewable energy can be developed through the increase of communication and information infrastructure. The above has been done by the integration of electrical systems through small generation capacities distributed in many points, which is a phenomenon that is changing power grids and electrical systems.

In relation to geothermal resources, the Intergovernmental Panel on Climate Change believes that the increased use of geothermal energy will contribute significantly to reducing emissions of greenhouse gases. The overall installed capacity is more than 12 GW, and there are about 700 projects in development.

Globally, Mexico ranks fourth in installed geothermal capacity, with about 840 MW, behind the United States, the Philippines and Indonesia. Mexico's geothermal potential is estimated to reach 10 GW. The reformation of the Mexican constitution established the need of a new law focused on geothermal resources. The new Law on Geothermal Energy published on 11 August 2014 covers, under the best international practices, the exploration and exploitation of the geothermal resources within the boundaries of the national territory, in order to generate electricity or

78 Ibidem. Pg. 8.
79 The Intergovernmental Panel on Climate Change was created in 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organisation (WMO) as a response to growing international concern to climate change. http://www.inecc.gob.mx/cpcc-lineas/606-cpcc-conv-marco1-
81 Ibidem.
82 Ibidem.
allocate it to various uses\textsuperscript{83}. SENER will be responsible to manage the smooth running of this new Law\textsuperscript{84}.

As for actions undertaken in energy transition, Mexico made an investment of around 1,600 million Mexican pesos in research and development with the creation of the first three Mexican innovation centres in wind, solar and geothermal energy\textsuperscript{85}.

Additionally, the Law on National Waters published on 11 August 2014\textsuperscript{86} established close coordination between the SENER and the National Water Commission to protect the integrity of aquifers, and also provides for efficient mechanisms to maintain the sustainability of geothermic hydrothermal deposits. It also incorporates some technical hydro-technique requirements, other related work permits, and the correspondent authorisation in environmental impact, which must be met by those conducting activities regulated by the commented Law on Geothermal Energy of 2014\textsuperscript{87}.

### 5.3 Energy Access

The National Strategy Plan 2013-2027\textsuperscript{88} includes a strategic topic that focuses on extending energy access to all nationals. Access to energy services improves quality of life and ensures social inclusion. With this objective, the Electric Industry Law of 2014\textsuperscript{89} created a Fund for the Universal Electric Service to cover the electrification of rural zones and marginalised urban zones. This account will be funded by the surplus resulting from the management of energy losses in the electricity market, ensuring the availability of resources to finance electrification projects\textsuperscript{90}.

The lines of action of CONUEE and CFE to comply with this objective are the following:


\textsuperscript{87} SENER. Secondary law. Electricity sector. Law on Geothermal Energy of 2014.


\textsuperscript{89} Electric Industry Law of 2014.

\textsuperscript{90} Ibidem.
• “Enhance existing programs to promote the use of wood stoves with advanced combustion to reduce the health impacts and increase efficiency.

• Establish programs to support the adoption of efficient technologies and renewable energies.

• Review and revise as appropriate the current methodology for setting the retail price, so that the well-being is support across the country, from technical support and targeted subsidies for low-income population.

• Increase participation of distributed generation from renewable energies, in the electrification of remote locations.

• Evaluate the most appropriate source of energy for each region so that the renewable and non-renewable energy resources are used better.

• Identify the fuel supply options that present the most cost-effective, including externalities, and implement programs to bring fuel to remote locations.

Moreover, to guarantee access to public services, private parties will have access to different activities in the energy sector when granted authorisations by SENER or CRE. These various requirements show that the energy sector public entities of Mexico are still involved in order to ensure energy access for all nationals.

6. Regional and International Cooperation

The 2015 International Energy Charter support its signatory parties enhancing regional cooperation in order to meet common energy challenges, acknowledging that enhanced energy trade is a powerful catalyst for strengthening regional cooperation for energy security. Signatories agree to develop cooperation with regional organisations for sharing experiences and specific examples from national practice in the areas of sustainable development, access to modern energy services, energy poverty reduction, clean energy, energy efficiency, as well as the development and broader use of new clean technologies.

Furthermore, the signatory parties are aware of obligations under major relevant multilateral agreements, of the wide range of international energy cooperation efforts, and of the extensive activities of existing international organisations in the energy field. The member parties agree to enhance development of trade in energy consistent with major relevant multilateral agreements, such as the WTO Agreement and its related instruments, and to also affirm the importance of full access to adequate dispute settlement mechanisms, including national mechanisms and international arbitration.

6.1 Mexican Regional Leadership: The Pacific Alliance

The ideal of an alliance on the Pacific coast of Latin America, under a common understanding for open markets, was initiated in October 2010 when Peru invited other open market economies from the region to begin a process of cooperation and integration to develop business relations with their Asian-Pacific counterparts. The initial participants were Chile, Colombia and Ecuador. Mexico decided to participate in a later stage, Panama remained as an observer, and Ecuador decided to not participate in this new regional integration effort.\(^{93}\)

At a Presidential Summit in 2011 the current members signed the “Lima Declaration” as a first step to create a common effort of integration in the Pacific, foster political dialogue and cooperation, and look towards the future in the Asia-Pacific region. The parties of the new Alliance established the improvement of their competitive position through free trade among them, as a base for economic integration.

The Pacific Alliance formally started on 6 June 2012 by the signature of the Framework Agreement that took place at the Presidential Summit at Paranal, Chile, with fundamental objectives such as the creation of a “free movement of goods, services, capitals and people”; the promotion of “higher economic growth, development and competitiveness in the member states, achieving greater welfare and social inclusion for their inhabitants, while overcoming social and economic inequality” and to establish this new initiative as a base for political, economic and commercial integration in the region towards the Asian-Pacific region.\(^{94}\)

Together, the four members account for 35% of Latin America’s GDP and 55% of the region’s exports. With over thirty observer countries, the Alliance has attracted attention not only from the countries of the region but also around the world. The

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\(^{92}\) International Energy Charter.  
\(^{94}\) Ibidem.
Alliance has progressed on issues such as reducing trade barriers, migration, financial markets, and multilateral ties. As an example, the countries agreed to eliminate tariffs on 92% of goods. In this context, the Pacific Alliance may be seen as a way to achieve regulatory energy convergence. However, this kind of initiative is not only focused on energy and does not give general energy principles on best practices across all borders. In any case, Mexico’s energy reform represents opportunities for other countries in the Alliance to make investments in this sector. Additionally, with its huge potential “Mexico can be a leader in the Alliance in shale gas development.” Considering its energy and economic potential, Mexico is a de-facto leader in the Pacific Alliance.

6.2 Mexico’s Membership in International Organisations and Free Trade Agreements

*Mesoamerican Project*

The Mesoamerican Integration and Development Project was initiated in 2001 to “promote the regional integration and development” between nine southern states of Mexico and all the Central American countries, Colombia and the Dominican Republic. The Project is purportedly intended to remedy a lack of investment and stimulate trade in the region by building or improving large infrastructure projects such as highways, air and sea ports, and electric and telecommunications grids. It consists of eight initiatives, including energy sector integration and sustainable development.

In relation to the energy sector, this project is relevant to Mexico as there is a transmission line between Mexico and Guatemala which has been operating since

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97 Mesoamerican Project, Who we are? http://www.proyectomesoamerica.org/
The project seeks to increase the transmission system between both countries. Moreover, it initiated the integration of Mexico to the electric market of Central America through the SIEPAC\textsuperscript{99}, being a relevant example of Mexico’s regional cooperation.

\textit{Gas pipeline Cooperation Agreement between Mexico, Guatemala, Honduras and El Salvador}

In March 2015 Mexico, Guatemala, Honduras and El Salvador signed a natural gas pipeline cooperation agreement to transport fuels with better prices from Mexico to Central America\textsuperscript{100}. The involved countries agreed that transparency, legal certainty and fair competition are the guiding principles for implementing the project\textsuperscript{101}. This regional effort responded to the historic objectives of Central America to promote access to natural gas, a cleaner fuel that would boost the competitiveness of the region, combat climate change, liberalize the regional market and determine taxation agreements. The project strengthens cooperation ties between Mexico and the Central American countries\textsuperscript{102}.

The project aims to start in 2016 and the operational phase is expected to start in 2019\textsuperscript{103}. However, it will need to develop further until a project roadmap is issued and the basic rules are clearly determined\textsuperscript{104}. Additionally, a potential regional legislation would be agreed to by the parties with the support of the CRE, the Inter-American Development Bank and the State Department of the United States\textsuperscript{105}. In

\textsuperscript{99} Sistema de Interconexión Eléctrica de los Países de América Central (SIEPAC) http://www.proyectomesoamerica.org/joomla/index.php?option=com_content&view=article&id=171
\textsuperscript{102} Ibidem.
\textsuperscript{105} Ibidem.
this respect, CEPAL has envisioned two main challenges. First, the development of modern regional legislation; second, the development of a multinational alliance to develop the first pipeline covering Central and South America\textsuperscript{106}.

**Energy integration with the United States**

Under the North American Free Trade Agreement Mexico has developed highly interconnected energy infrastructure with the United States. The soaring demand of natural gas for Mexican consumption is provided by pipelines that cross the frontier, and the electric grid is also interconnected. There is active energy cooperation between the nations, as shown in agreements like the ‘Bilaterial Framework on Clean Energy and Climate Change’ from 2009 and the ‘Trans-Boundary Hydrocarbons Agreement’ from 2012, that aim to join forces to exploit natural gas and oil in the Gulf of Mexico. In 2010 the Cross-Border Electricity Task Force was created to promote regional renewable energy markets between Mexico and the United States. In March 2015 the Task Force was given a special boost as the energy secretaries of both countries became co-chairs\textsuperscript{107}.

**Latin American Energy Organisation**

The Latin American Energy Organisation (LAEO or OLADE in Spanish) is the only Latin American organisation dealing specifically with energy. Member states work with political and technical agendas to achieve regional and sub-regional energy integration and cooperation. OLADE was born in the early seventies as an initiative of Latin American and Caribbean countries for further economic interaction between developed and developing countries. The authorities of the energy sector went through a process of political mobilisation and signed the Lima Agreement on 2 November 1973, the constituent instrument of the Organisation\textsuperscript{108}.

Twenty-seven countries in Latin America and the Caribbean have ratified the instrument and Mexico acceded to the organisation on 6 February 1975\textsuperscript{109}. OLADE

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\textsuperscript{106} Ibidem.


\textsuperscript{108} OLADE. The organisation http://www.olade.org/olade/

\textsuperscript{109} OLADE. Member countries http://www.olade.org/paises-miembro/
aims for technical cooperation on policies for sustainable and comprehensive energy development, to address the energy challenges of the region and the defence of natural resources.

OLADE is an important platform for the region, and to Mexico, as it gives the possibility of developing energy integration by different means, such as with the promotion of the development of knowledge for the sector, capacity building, and providing information services for decision making.

**International Energy Agency**

On 16 November 2015, Mexico presented an official letter to the Executive Director of the International Energy Agency (IEA) declaring its interest in becoming a member of the organisation. The IEA was founded in 1974 originally to prevent major disruptions of oil supply through the collective response of the member states. Currently, this organisation expanded its mission to a broader energy scope, to ensure reliable, affordable and clean energy and beyond for its 29 member countries, all members of the OECD. The IEA also produces statistics and analysis mainly on energy security, economic development, environmental awareness and engagement worldwide. It also advocates policies to enhance the reliability, affordability and sustainability of energy.\(^{110}\)

In 2013, the OECD issued a report justifying the need of energy reform in Mexico. The IEA Governing Board will consider the request of Mexico and will work with the national authorities on the conditions that need to be met in order to acquire membership. Among other conditions, Mexico would have to maintain oil reserves equivalent to 90 days of net imports.\(^{111}\)

**Asia-Pacific Economic Forum**

The Asia-Pacific Economic Forum (APEC) is the premier Asia-Pacific economic forum for 21 Pacific Rim member economies which promotes free and open trade

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\(^{110}\)IEA. About us. [https://www.iea.org/aboutus/](https://www.iea.org/aboutus/)

throughout the Asia-Pacific region. It was created in 1989 in response to the growing interdependence of Asia-Pacific economies, and APEC’s primary goal is to support sustainable economic growth and prosperity in the region.\textsuperscript{112}

Accounting for around 60 per cent of world energy demand, the APEC region includes four of the world’s five largest energy users (China, the United States, Russia and Japan) (…) by 2035, APEC members’ demand for energy is forecast to increase by 34% to around 6 900 Mtoe above 2013 levels.\textsuperscript{112}

Since 1990 APEC has an Energy Working Group (EWG) which seeks to support APEC members “to strengthen domestic and regional energy security and lower the carbon intensity of energy supply and use across the region, facilitated by information and data exchanges, joint research and development, and open trade and investment”\textsuperscript{114}

Additionally, APEC has an Energy Security Initiative, which comprises a series of short-term and longer-term measures depending on the challenges of the APEC region\textsuperscript{115}. APEC also has Guidelines and Peer Review on Energy Efficiency Policies of APEC Member Economies\textsuperscript{116}.

Regarding sustainable development, Mexico and Australia had a Partnership Initiative to give strong contribution to the APEC’s World Summit on Sustainable Development by submitting two relevant reports, one in 2002 named “Energy for Sustainable Development: The Contribution and Role of the APEC Energy Working Group” and the other in 2007 named “Energy for Sustainable Development: Fostering Regional Energy Cooperation in APEC, 2007-2010”\textsuperscript{117}. This support has shown the effective contribution of Mexico as an APEC member for the enhancement of such important topics in the EWG agenda as energy security, energy efficiency, and environmental protection, among others.

\textsuperscript{112} Asia-Pacific Economic Cooperation website. http://www.apec.org/About-Us/About-APEC.aspx
\textsuperscript{113} Asia Pacific Energy Research Centre (APERC) Publication, APEC Energy Demand and Supply Outlook (5th Edition) http://www.apec.org/Home/Groups/SOM-Steering-Committee-on-Economic-and-Technical-Cooperation/Working-Groups/Energy
Free trade agreement Mexico-Central America

Since 2008, Mexico and Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica, as Central American countries, started negotiations for a Free Trade Agreement (FTA) as a single regional instrument in force among them. On 20 October 2011, after seven rounds of negotiations, the participating countries concluded technical negotiations and the single FTA was signed on 22 November 2011, entering gradually into force among signatories.\(^\text{118}\)

This FTA replaced prior independent commercial agreements between Mexico and each of the Central American countries and is important to the energy sector of the region, as it covers all kind of investments between the parties in a generic way.\(^\text{119}\)

7. Investment Protection

In recognising the importance of energy security for energy producing, transit and consuming countries (regardless of their state of development), the 2015 International Energy Charter encourages cooperation to promote closer and mutually beneficial commercial relations and investments in the energy sector. Signatories agree to create a climate favourable to the operation of enterprises and to the flow of investments and technologies. In order to promote the flow of investment, signatories agree to make every effort to remove all barriers to investment in the energy sector and provide, at national level, for a stable transparent legal framework for foreign investment in accordance with relevant international laws and rules on investment and trade.

The signatories affirm the importance of full access to adequate dispute settlement mechanisms, including national mechanisms and international arbitration in accordance with national laws and regulations, including investment and arbitration laws and rules, all the relevant bilateral and multilateral treaties and international agreements.\(^\text{120}\) [Emphasis added]

7.1 National and International Arbitration

Arbitration is an alternative dispute resolution (ADR) mechanism to resolve disputes between two or more parties outside the courts. It is a flexible, consensual process.

\(^{118}\) Foreign Trade Information System. http://www.sice.oas.org/tpd/CACM_MEX/CACM_MEX_e.asp


\(^{120}\) International Energy Charter.
for resolving disputes in a binding, enforceable manner. It is important to note that it could be national or international depending on some features of the dispute and the national legislation of the host state. To allow the inclusion of international arbitration in energy-related agreements where the host state is a party is considered to be an investment protection mechanism, as the dispute will be solved by an impartial tribunal with knowledge in the sector and guided by a procedure chosen by the parties.

Recently, Article 21 of the Hydrocarbons Law (Ley de Hidrocarburos) established that hydrocarbon exploration and extraction contracts could include ADR mechanisms, such as arbitration, to resolve disputes that could arise between the parties. The fundamental requirements of the arbitral procedure are that the substantial law of the arbitration has to be the Mexican Law, the language has to be Spanish and the award will be binding for the parties. The above is in line with the spirit of the Mexican energy reform as it encourages investment promotion and protection within international standards.

7.2 The Experience in NAFTA

The North American Free Trade Agreement is a binding commitment between Mexico, the United States and Canada for economic and trade integration in the North American region. The main objectives are the elimination of barriers, increased investment opportunities and promotion of regional cooperation and integration. This agreement was signed in 1992 and entered into force in January 1994. However, the ideas of integration were present in the region since the beginning of the 1980s.

In the decade of the 1980s the European Community was making efforts to integrate the economy of Europe. The governments of Canada and the United States believed this regional economic integration might challenge their economic interests. Therefore, in 1986, the United States and Canada initiated negotiations for economic integration. The President of Mexico attempted to attract European investment at the end of the 1980s, but he did not succeed and instead joined the North American

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121 International chamber of Commerce (ICC). Introduction to arbitration
122 Hydrocarbons Law (Ley de Hidrocarburos) into force since August 12th, 2014. DOF 11-08-2014.
123 NAFTA, Art. 102.
https://www.nafta-sec-alena.org/Home/Legal-Texts/North-American-Free-Trade-Agreement?mvid=2#b5b817ee-c48a-4dda-b8d9-c4564e34ac4b
negotiations on regional trade. These negotiations were completed in 1988 and the Agreement went into force in January 1989124.

The agreement consists of a 2000 page treaty, with 22 chapters for the regulation of trade and investment within North America. Essential elements such as market access for goods, protection of foreign investment, protection of intellectual property, access to government procurement as well as rules of origins are the pillars of this agreement125. One of the most distinctive and also controversial elements of the agreement was the introduction of investor-government dispute resolution provisions. Under the rules included in Chapter 11 of the agreement, foreign direct investors may have the right to challenge the decisions of host governments that may affect their operations or investments126.

This situation shows that Mexico has been part of a system for the protection of foreign investment since the 1990s. Since NAFTA entered into force, Mexico has faced lawsuits for tax127, environmental128, agriculture129 and gaming claims130. The exercise of investor-government dispute resolution over more than 20 years shows the commitment of Mexico to play by the rules and respect the agreements on protection of investment.

Nevertheless, it is important to mention that NAFTA is an agreement that has applicability on trade issues in several of the chapters of the agreement, such as investment, cross trade in services and government procurements and basic petrochemicals131. However, the beginning of the Chapter on energy starts with a text that states “the Parties confirm in full respect to their constitutions”, sending a very powerful message, specifically to the Mexican party, whose Constitution in Article 28 provided a monopoly for the exploration and exploitation of hydrocarbons to the government owned company PEMEX132. Annex 602.3 of this agreement contains a reservation emphasising that Mexico reserves, to itself, the exploration and production of hydrocarbons, and the generation, transmission, distribution and supply of electricity.

128 Waste Management Inc. vs. Mexican Government.
129 Gami Investment Inc. vs. Mexican Government.
130 International Thonderbird Gaming Corp vs. Mexican Government.
132 KPMG. Reforma Energética. La nueva realidad de México. 2015.
With the recent energy reform carried out by the current administration, Mexico has modified its constitution to welcome foreign investment in the oil and gas sectors and this will also have an effect on the applicability of the energy chapter of NAFTA.

**Trans-Pacific Partnership**

On 5 October 2015, after five years of negotiations, representatives of twelve countries including the United States and the countries of the Asia-Pacific region—Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam—announced their agreement on the Trans-Pacific Partnership (TPP)\(^1\). The full text was available from 18 November 2015 for its revision and consideration before signature\(^2\). The TPP partners envision that the agreement provides “high standards for trade and investment in the Asia Pacific region”\(^3\) and seeks to “promote economic growth; support the creation and retention of jobs; enhance innovation, productivity and competitiveness; raise living standards; reduce poverty in our countries; and promote transparency, good governance, and enhanced labour and environmental protections”\(^4\).

The TPP includes 30 chapters, which eliminate tariffs and nontariff barriers to trade in goods, services, and agriculture, and establish or expand rules on a wide range of issues including intellectual property rights, foreign direct investment, and other trade-related issues\(^5\). It is denominated as the “21st-century agreement” which addresses new and cross-cutting issues presented by an increasingly globalised economy\(^6\).

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\(^3\) Economy Secretary of Mexico, Executive Summary TPP. [http://www.economia.gob.mx/files/comunidad_negocios/comercio_exterior/TPP_resumen_ejecutivo.pdf](http://www.economia.gob.mx/files/comunidad_negocios/comercio_exterior/TPP_resumen_ejecutivo.pdf)


\(^5\) Office of the United States Representative. Executive Office of the President. Full text of the Trans-Pacific Partnership Agreement. [https://ustr.gov/tpp/](https://ustr.gov/tpp/)

The TPP was initially for the Pacific Rim and its members were initially relatively small economies. The "U.S.A. already had bilateral trade agreements with Australia, Chile, Peru and Singapore. However, U.S.A. got interested in this association to reach a transpacific economic integration"\textsuperscript{139}. The rise of the Asian economies in the decades of the 1980s and 1990s increased the economic power of these nations. At the same time the process of globalisation was accelerating, providing the basis for the multilateral agreements of economic cooperation and integration\textsuperscript{140}.

Mexico decided to participate in the TPP negotiations, in accordance with the objectives established in its National Development Plan 2013-2018 and the consolidation of the Asia-Pacific Region\textsuperscript{141}. The participation of Mexico in TPP shows its openness for trade and regional integration across the region. TPP will influence the future of the energy sector in Mexico. TPP has been interpreted as a strategy to increase the integration of Mexico into the global economy and to continue a long tradition of promotion and protection of investment to foster the development of its economy\textsuperscript{142}. At the same time, Mexico has been understood as a key factor of the supply chain that may be created between Asia and North America, more particularly with the United States\textsuperscript{143}.

Mexican energy reform was excluded from NAFTA, but early in the negotiations it was expected to be included in TPP\textsuperscript{144}. Arguably, future Mexican governments will be impeded from reverting changes in energy policy, as it is endorsed in the TPP. Mexico is internationally bound to retain the recent reforms that opened the market. In other words, TPP safeguards the national energy reform\textsuperscript{145}.


\textsuperscript{141} National Development Plan 2013-2018, Mexico.

\textsuperscript{142} Ibidem.


**Transatlantic Trade and Investment Partnership**

The Transatlantic Trade and Investment Partnership (TTIP) is a proposed free trade agreement between the European Union and the United States, with the aim of promoting multilateral economic growth. The American government considers TTIP as a companion agreement to TPP. In January 2015 the European Commission published parts of an overview, however, if an agreement is to be made, it is not expected to be concluded before 2016.

If finalised and implemented, TTIP will bring multiple challenges for the Americas. For example, Mexico and Canada have mentioned their interest to participate in these negotiations. In this sense, an agreement may be finally concluded between NAFTA and the European Union. Moreover, linked countries may find the mechanisms to avoid a possible diversion of trade and investment, which may diminish the utility of their particular bilateral trade agreements\(^\text{146}\).

Moreover, there are multiple and complex implications for Latin America and the Caribbean in this possible ‘mega regionalism’, and this depends on factors such as the production and export structure of every country and sub-region, and their respective strategies for international economic insertion\(^\text{147}\).

There are other initiatives which have arisen from the Latin American Pacific Rim Forum and the integration agreement between Mexico, Chile, Colombia and Peru. These two do not exclude TTIP. However, as countries of the region exclusively integrate them, they could attend to the interests and priorities of the region and their approximation to Asia and the Pacific\(^\text{148}\).

**Bilateral International Treaties - BITs**

Mexico is a country that has been committed to the protection of foreign investment since the second half of the 1990s, and has continued to protect foreign investors by bilateral investment agreements formed with the principal economies of the world, and other countries from different continents. As the following chart shows, the Mexico has been continuously developing commercial links on a bilateral basis.

<table>
<thead>
<tr>
<th>No.</th>
<th>Partners</th>
<th>Status</th>
<th>Date of signature</th>
<th>Date of entry into force</th>
</tr>
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<td>13/11/1996</td>
<td>22/06/1998</td>
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<tr>
<td>2</td>
<td>Australia</td>
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<td>23/08/2005</td>
<td>21/07/2007</td>
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<td>29/06/1998</td>
<td>26/03/2001</td>
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<td>5</td>
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<td>25/07/2007</td>
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<td>31</td>
<td>Uruguay</td>
<td>In force</td>
<td>30/06/1999</td>
<td>01/07/2002</td>
</tr>
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</table>

Source: Investment Policy Hub, UNCTAD.
8. Conclusions

As has been expressed throughout this document, recent energy reform is unprecedented in Mexico. The concept of national dominion over natural resources was initiated by the nationalisation of the oil and gas industries in 1938, and it imprinted a deep feeling of ownership and national pride in the energy industry on the mind-set of Mexican society. This situation limited any foreign contribution that could be made for over 70 years, creating invisible but powerful barriers that diminished the flow of innovation, technology and funds that are required to face the challenges that the modern energy industry presents. Such change has required a courageous effort from the government to present this reform and begin the transformation of the energy industry and its meaning within Mexican society.

Several policy instruments and laws have been developed for the constitutional, legal and institutional framework required to implement this transformation. New interpretations of key concepts such as energy security, the creation of new institutions such as Centro Nacional de Control de Gas (CENAGAS) and Agencia de Seguridad, Energía y Ambiente (ASEA), and innovative approaches towards a fully open market that allows the participation of foreign actors are the common elements of the renovation of the energy sector in Mexico.

Nevertheless, due to the size and complexities of this enterprise, the international dimension of the energy reform has not been developed to its full extent. However, Mexico has at its disposal several international tools to galvanise the international dimension of energy reform, such as the Trans-Pacific Partnership agreement, more than 30 BITs, the NAFTA agreement, the potential membership of the International Energy Agency and, hopefully in the near future, the International Energy Charter. Though the absence of Mexico in the signature ceremony of the International Energy Charter at the Ministerial Conference on 20/21 May 2015 in The Hague, Netherlands could be explained as part of the mentioned lack of an international dimension of the energy reform, this is one of the instruments that could be useful to provide the proper set of principles that promotes the incorporation of this modern Mexican energy sector into the international scene.

The International Energy Charter gathers a very diverse community of countries with dissimilar political ideas, structures and economies. Nevertheless, more than 79
nations have so far agreed on a set of basic principles that frame the international energy sector. Among the signatory countries of the IEC are key partners of Mexico such as the United States, China, Japan, and the other two members of the Pacific Alliance, Chile and Colombia. Therefore, the international relations and economic context of this new tool for development of the international dimension of energy reform is already in place.

For the particular case of Mexico, the International Energy Charter provides a set of international standards that can improve the confidence of new foreign investors, and defines specific principles that may guide cross-border trade, transit and transport of energy with its North American neighbours. It also enhances the bilateral and multilateral frameworks of cooperation among its signatory countries at a regional and transnational level, this of course includes the relations between Mexico and its Central American neighbours. It also promotes development on key areas for the transition to a low carbon economy with measures on research, technological transfer, sustainable and clean energy, and energy efficiency, among others.

Furthermore, Mexico’s adoption of the 2015 International Energy Charter would also greatly benefit the Energy Charter Process itself. In political terms Mexico is the common link between Anglo and Latin America, working as a peer with the United States and Canada, and at the same time leading initiatives in Latin America, as in the case of its leading role in the Pacific Alliance. In economic terms, Mexico is not only one of the top ten oil producers in the world, but is one of the most thriving economies of the American continent, enhancing its importance on the global stage. These examples show how important Mexico may be as a partner in the process of the International Energy Charter, particularly in the case of Latin America, but also fully displaying how the benefits of its potential membership could strengthen the principles of good governance that underpin global energy architecture.
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