The Mexican-Danish Climate Change Mitigation and Energy Program

-The Political and Economic motivations for Denmark and Mexico to engage in a government collaboration on climate change and energy

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Author: Mads Elgaard Petersen
Supervisor: Carlos Salas Lind

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Resumé

Dette kandidatspeciale har de politiske og økonomiske motivationer for Danmark og Mexico i henhold til at indgåelsen af et myndighedssamarbejde på klima- og energiområdet. Danmark og Mexico har siden 2014 indgået i et klima- og energi program fokuserende på de Mexicanske klimamål og energi reform.

Motivationerne er blevet gennem en komparativ analyse af Mexicos og Danmarks tilgange til klimapolitik, energipolitik og politik i forhold til international handel, dette med en teoretisk basis in ny-institutionalismen, transaktionsomkostninger og udbud- og efterspørgselsdrevne faktorer for eksterne institutionelle rammer.

For Mexico faciliterer myndighedssamarbejdet deres institutionelle transformation både i forhold til klimaforandringer og energipolitik.

For Danmark kan myndighedssamarbejdet være en katalysator for danske virksomheder til at investere i den Mexicanske energisektor som er blevet yderligere privatiseret gennem den Mexicanske energireform

Det kan derfor konkluderes at motivationer kan blive fundet både gennem Mexicos og Danmarks tilgang til klimaforandringer, energipolitik og international handel

Tableof Contents

Abbreviations list

Abbrevation list (Da: – *In Danish*) (Sp: – *In Spanish*)

3GF – Global Green Growth Forum

BAU baseline – Business as usual baseline

C3 – Climate Change Council (Sp: *Consejo de Cambio Climático*)

CENACE – National Center for Energy Control (Sp: *Centro Nacional de Control de Energía*)

CFE – Federal Electric Commission (Sp: Comisión Federal de Electricidad)

CCMEP – Danish-Mexican Climate Change Mitigation and Energy Program

CDM – Clean Development Mechanism

CFE – Federal Electricity Commission (Sp: Comisión Federal de Electricidad)

CICC – Intersecretarial Commission on Climate Change (Sp: *Comisión Intersecretarial de Cambio Climático)*

COP – Confernce of the Parties

GHG – Greenhouse gasses

DANIDA – Danish International Development Agency

DEA –Danish Energy Agency (Da: *Energistyrelsen*)

EFKM – Ministry of Energy, Utilities and Climate, Denmark (Da: *Energi- Forsynings- og Klimaministeriet*)

ENCC – National Climate Change Strategy, Mexico (Sp: *Estrategia Nacional de Cambio Climático*)

EVM – Ministry of Industry, Business and Financial Affairs, Denmark (Da: *Erhvervs- og Vækstministeriet*)

FDI – Foreign Direct Investment

FTA – Foreign Trade Agreement

INDC – Intended National Determined Contribution

INE – National Institute of Ecology (Sp: *Instituto Nacional de Ecología*)

INECC – National Institute of Ecology and Climate Change, Mexico (Sp: *Instituto Nacional de Ecología y Cambio Climático*)
IMF – International Monetary Fond

LGEEPA – General Law of Ecological Equilibrium and Environmental Protection, Mexico (Sp: *Ley General del Equilibrio Ecológico y la Protección al Ambiente*)

NAFTA – North American Free Trade Agreement

MDSD – Most Different Systems Design

MSSD – Most Similar Systems Design

NDC – National Determined Contribution

NIE – New Institutional Economics

RCI – Rational Choice Institutionalism

PAN – National Action Party, Mexico (Sp: *Partido Acción Nacional*)

PECC – Special Climate Change Program (Sp: *Programa Especial de Cambio Climático*)

PROFEPA – Federal Agency of Environmental Protection (Sp: *Procuraduria Federal de Protección al Ambiente*)

SEDESOL – Secretariat of Social Development, Mexico (Sp: *Secretaría de Desarrollo Social*)

SEGOP – Secretariat of the Interior, Mexico (Sp: *Secretaría de Gobernación*)

SEMARNAP – Secretariat of the Environment, Natural Resources and Fisheries, Mexico (Sp: *Secretaría del Medio Ambiente, Recursos Naturales y Pesca*)

SEMARNAT – Secretariat of Environment and Resources, Mexico (Sp: *Secretaría de Medio Ambiente y Recursos Naturales*)

SENER – Secretariat of Energy, Mexico (Sp: *Secretaría de Energía*)

SHCP – Secretariat of Finance and Public Credit, Mexico (Sp: *Secretaría de Hacienda y Crédito*)

SINACC – National Climate Change System, Mexico (Sp: *Sistema Nacional de Cambio Climático)*

UM – Ministry of Foreign Affairs, Denmark (Da: *Udenrigsministeriet*)

UNFCCC – United Nations Framework Convention on Climate Change

WTO – World Trade Organization

List of Figures

1. Introduction

In June 2017, the first phase of the Danish-Mexican climate change mitigation and energy program (CCMEP-program) concluded a three-year cooperation on climate change and energy between Denmark and Mexico. The program was implemented in 2014 and aimed to support Mexico in achieving its climate change goals to reduce greenhouse gas (GHG) emissions, particularly through a low-carbon transition in the Mexican energy sector, as planned in the comprehensive Mexican energy reform from 2013 (Danish Energy Agency [DEA], n.d.). To support this process, the program conducted knowledge sharing in climate change policy development and energy system analysis, as well as on-ground technical support and projects of implementation (Ibid).

During a recent state-visit the Danish Prime Minister Lars Løkke Rasmussen described Mexico as an "important partner" and a "perfect match" (Statsministeriet, 2017). Yet, Mexico and Denmark are in many geographical, economic and political ways very different countries. Still the bilateral collaboration on climate change and energy between Denmark and Mexico has emerged in recent years.

Climate change is predicted to have a profound global environmental, societal and economic impact, yet the impact will vary significantly from country to country and implies significant uncertainties (Stern, 2007). In this respect, a particular concern regarding governmental action on climate change is the dilemma that many developing countries will experience a deeper impact of climate change with lesser funds to address it, notwithstanding that, historically, developed countries have contributed with most emissions (Ibid). The climate can be seen as a public good, a resource accessible to everyone, thus climate change represents a market failure or in other words a 'tragedy of the commons' dilemma, where actors tend to 'free ride' because it is more economically beneficial for them to do so. These dilemmas and uncertainties show that climate change as much an economic and political challenge as it is an environmental challenge (Ibid). In an economic and political sense, climate

change constitutes both a global and local market failure, because emitters do not pay for the emissions they create with production, transportation etc.

In this global context, the bilateral cooperation between Denmark and Mexico is merely a drop in the sea. However, while the uncertainties and variability regarding the consequences of climate change have challenged the success of reaching sufficient multilateral solutions, Mexico and Denmark, as two relatively different countries in various aspects, have found themselves on common ground to engage in a bilateral collaboration to address the challenge, focusing on the Mexican mitigation goals and energy reform.

1.1 Research Question

This study will investigate the political and economic factors that motivate Mexico and Denmark to engage in such a program in order to address climate change bilaterally. The thesis will therefore be structured around the following research question:

Which political and economic factors can motivate a developed country like Denmark and a developing country like Mexico to cooperate bilaterally on climate change and energy in order to implement sustainable energy solutions?

1.2 The CCMEP Program – a brief presentation

The CCMEP program is a bilateral program between Denmark and Mexico on climate change and energy initiated in 2014. The institutions directly involved in the program are Danish Energy Agency (DEA), which is the executive department of the Danish Ministry for Energy, Utilities and Climate (EFKM), and the Mexican Secretariats of Environment and Resources (SEMARNAT) and of Energy (SENER). The program is focused on the Mexican goals for climate change mitigation and energy transformation towards more renewable energies and energy efficiency (Danish Energy Agency, n.d.).

In 2012, under the former president Felipe Calderón, Mexico was the second country in the World to implement a climate change law, setting the legal framework for the national climate change strategy that aims to reduce GHG emissions by 50% in 2050

from the 2000-level of emission (Cámara de Diputados, 2012). Under the current President Enrique Peña Nieto, Mexico entered in the Paris Agreement under the UNFCCC that aims to keep the global temperature rise under 2 degrees Celsius. In their mid-term strategy towards 2050 to the UNFCCC, Mexico states that GHG emissions should be decoupled from economic growth in 2026 and reduced by 25% in 2030 under a calculated 'business as usual' line, however still with the same goal of a 50% reduction for 2050 (SEMARNAT & INECC, 2016).

An important element for the Mexican climate change strategy to succeed is the Mexican energy reform that has initiated a transformation in the Mexican energy sector towards the increased use of renewable energies: This reform aims to generate 35% of electricity from clean energy sources in 2024, and furthermore 50% in 2050 (México Gobierno de la República, 2014).

The program therefore supports the Mexican government in achieving its goals on reducing GHG emission and transforming the energy sector through three different focus points: climate change mitigation, increased use of renewable energies & improvement of energy efficiency in Mexican non-residential buildings and larger industries. These focus-points have generally been conducted through the sharing of political expertise and know-how and technical support from Denmark, because of Denmark's strongholds on climate change mitigation and energy (DEA, n.d.)

From these main focal points the CCMEP Program has conducted a series of activities of technology and infrastructure development. Some of these activities were: An elaboration of a Mexican wind atlas to explore the further potentials for integrating wind energy in the Mexican energy sector (Udenrigsministeriet [UM], 2017b), a pilot project on energy management between the program and key companies within the Mexican food and diary sector (UM, 2017a) and evaluation coordination on the Mexican federal climate change budget for climate change (UM, 2017).

Under its first three-year period, the program has been funded with 45 million DKK under the Danish Climate Envelope, established in 2008 to support developing

countries in mitigation and adaption activities towards climate change. Denmark has thus also participated in similar programs with Vietnam and South Africa.

In 2017, Denmark and Mexico decided to extend the program to a second phase until 2021. The specifics of the new phase are still being elaborated to date, however in the Danish energy-export strategy for 2030, the program is mentioned to open for further involvement of the Danish private sector (UM, EFKM, & EVM, 2017).

1.3 Thesis Outline

The aim for this thesis is to identify political and economic motivations for both Denmark and Mexico to engage in the CCMEP program. From the presentation of the program above, it is explained that the program forms part of an extensive institutional transformation in Mexico to address climate change and to reform its energy sector.

The theoretical framework for the thesis will therefore be based upon new institutionalism, more precisely new institutional economics. The methodological approach will be a comparative case study of Denmark and Mexico, in order to compare their political and economic approaches towards respectively, climate change, energy and foreign trade. Climate change, energy and foreign trade will therefore be constituting the three separate parts for the analysis

2. Theoretical Framework and methodological approach

The theoretical framework for the thesis will draw upon rational choice institutionalism (RCI), and in particular upon the works of Douglass North, who together with Ronald Coase and Oliver Williamson founded the New Institutional Economics school (NIE). The NIE scholars emphasized the importance of institutions in political and economic processes to define property rights and lower transaction costs (Agboola, 2015).

2.1 Rational choice institutionalism

The rational choice theory is founded with ontological and epistemological questions involving: *the nature of human agency and its relationship to social structures, the role of ideas and material forces in social life, the proper form of social explanations and so on* (Pollack, 2006 p. 32. Cited from; Wendt, 1999). Rational choice theory can be both normative and positive; when normative it strives to tell what people 'ought to do' to achieve their goals, no matter what their goals might be, while as positive it *adopts a particular set of assumptions about actors and about their social context and seeks to generate testable hypothesis about social behavior* (Pollack, 2006, p. 51; from the definition of Elster, 1986).

RCI is not a uniform theoretical approach. It is rather a diverse set of theoretical frameworks that have in common its inspiration, yet also critique and further elaboration, from the conventional rational choice theory and neoclassical economics (Pollack, 2006). Together with sociological and historical developments of conventional theories within the field of social sciences, RCI also takes part in the new institutionalist movement with a common interest in the role of institutions in different contexts of human interaction. Thus, RCI is often mentioned as one of the three 'new institutionalisms', the others being historical institutionalism, focusing on institutional changes over a long period of time, generally with a structural approach, and sociological institutionalism, focusing on how the cultural and ideational heritages of societies are present in institutions, generally with a constructivist approach (Hall & Taylor, 1996).

Regarding the NIE scholars, and in particular North, Margaret Levi (2009) credits them as one of the four major influencers on contemporary RCI analysis within historical and comparative politics, together with: Duncan Black's (1958)and Anthony Downs' (1957) contributions to the study of electoral outcomes, Kenneth Arrow's (1948) development of the social choice theory and Mancur Olson's (1965) collective action theory. The contribution from North (1981; 1990a) comes from the combination of transaction cost theory and the recognition of relative bargaining power that established the foundation of several analysis of the costs of different political

outcomes as well as the institutional constraints of political and economic action (Levi, 2009). Some of the fundamental common traces of these four theoretical contributions are that they accept key-assumptions from conventional neoclassical economics and rational choice theory, such as the acceptance of the scarcity of resources and the basic rational assumption about individuals in the process of decision making, yet with the major difference that it happens within the constraints of an institutional framework and on the basis of imperfect knowledge (Ibid).

2.2.1 Neoclassical Economics

The role of institutions clearly distinguishes North, and other RCI scholars, from conventional neoclassical economics and rational choice theory. Conventional neoclassical economics was developed in Europe in the late 19th century and draws heavily upon Adam Smith's 'invisible hand' theory from *The Wealth of Nations* (1904: Kjosavik, 2003) In overall terms, it states that a de-regulated market, increased specialization and the division of labor will eventually make the market and hence economies efficient because of competition in a world of scarce resources (Finlayson, et al. 2005). At its micro-foundational essence is the rational choice theory; the rational and instrumental behavior of individuals, whom engages with one another in order to obtain their self-interested and fixed set of goals (Kjosavik, 2003). In this assumption of rationality lies that individuals take decisions from perfect information about their choices and alternative options as well as about the actors they engage with, hence individuals act from instrumental rationality and eventually find themselves in an equilibrium, which allows for scholars to deductively analyze different political and macroeconomic problems through microeconomic supply and demand and cost-benefit models or cooperative game theory (Agboola, 2015).

Neoclassical economics and rational choice theory is therefore fundamentally based upon methodological individualism. This means that societal or economic phenomena on a macro-level can always be traced back to the choices and actions of individuals and not the other way around, thus decisions involving several individuals, e.g. political decisions in democratic nations, are based on an aggregate of strategically interacting individuals seeking to maximize their self-oriented goals, while, on the

other hand, structural constraints, such as institutions, are irrelevant for the decision making (Kjosavik, 2013).

North's theory of institutions does not reject completely the conventional theories of rational choice and neoclassical economics, rather it is a further elaboration of it. First of all, his theory is also build upon methodological individualism, as he has argued, his primary focus has always been *how human beings have organized themselves over time* (North, Brown, & Lueck, 2015. p. 7), second, he did not reject completely the role of deductive microeconomic models in economics and politics, rather he considered them to be incomplete given the failures of the market when applied to reality; the solution could be found within the structural constraints of institutions, as he put it: *Institutions, together with the standard constraints of economic theory, determines the opportunities in a society* (North, 1990a. p. 7).

Thus, NIE is both a critique and a further elaboration of the conventional neoclassical economics. As Bates, Sened & Galiani (2014) argue, NIE, and North in particular, has changed the focus of governments and development agencies from *"market fundamentalism to the promotion of "good governance"* (p. 2). The argument is that market failures shows the importance of defining the role and governance of institutions and institutional change in society, mainly because of positive transaction costs and individuals acting upon imperfect knowledge. Thus, institutions can be a key to correct these market failures by providing information and lowering transaction costs (Roy, 1995).

2.2.2 New Institutional Economics

While not rejecting the neoclassical paradigm completely, what separates the NIE scholars from the neoclassical tradition is the focus on transaction costs, property rights, contracts and in consequence on the constraints that either prevent or facilitate the political or economic markets to be efficient: as a result, attention was drawn to institutions (Ménard & Shirley, 2011). It was Coase in his essays "The nature of the firm" (1937) and "The problem with social cost" (1960) that established this focus on positive transaction costs in economics. The main focus for Coase, as well as

for Williamson, was the role of transaction costs in relation to the firm, while the main focus for North focused on the role and governance of transaction costs both for both political and economic actors in society (Ménard & Shirley 2011). A particular interest for the works of North was why the economies of developing and developed countries have evolved in such different manner, when neoclassical economics and international trade theory had stated that they would eventually converge (North, 1990a. p. 6). His proposal was to draw attention to transaction costs, and consequently to institutions because, as he argued, they are the *humanly devised constraints that shape human interaction*. *In consequence they structure incentives in human interaction, whether political, social or economic* (North, 1990a. p. 3)

North (1990b) distinguished between economic and political 'markets'; in political markets, you exchange promises for votes, in economic markets, you exchange goods or services for capital. While there are many things that differentiates the political from the economic market, they are both interconnected and involve transaction costs. Political markets are more complicated and diverse than the economic market, because of a higher degree of influence from subjective models of individuals, while economic markets tend to have more homogenous rules. Still they affect each other because, as North (1990a) puts it: *property rights and hence individual contracts are specified and enforced by political decision-making, but the structure of economic interests will also influence the political structure* (p. 48).

From the definition of North (ibid), institutions are the *rules of the game in a society* (p. 3). These rules or constraints involves both formal rules such as laws and property rights and informal rules such as culturally bounded codes of conduct. Formal rules are more visible, and can change more rapidly, while informal rules tend to last longer and be harder to change.

North also distinguished institutions from organizations; the organizations are the groups of people working together with a common purpose within the institutions but constrained by the institutional rules. Said in metaphorical terms, if institutions are the rules of the game, organizations are the players or teams that are playing the game

and constrained by the formal and informal rules it contains. These could be political parties, regulatory agencies, economic trade unions or firms (Ibid, pp. 4-5). Individuals within the organizations that possess the sufficient bargaining power can eventually alter the institutional rules, thus they become political or economic entrepreneurs, who incrementally redistribute or change the institutional setup in favor of their own interests (Ibid, p. 16). Institutions are thus both shaped by individuals and their actions, while the other way around institutions also shape the action of individuals by the constraints they are providing (Roy, 1995).

Within the institutions, the institutional arrangements and the institutional environment are also distinguished (Davis & North, 1970). The institutional arrangements are the specific structures and rules that are governing the institutional contracts, the institutional environment represents the context of these contracts, these consist both of the more general rules, such as property rights or enforcement mechanisms but also more deeply of expectations about human behavior, power relations as well as the infrastructure of communication and thus the flow of information (Dorward, Kydd, Morrison, & Poulton, 2005).

As mentioned before, positive transaction costs and individuals acting on imperfect knowledge are key arguments for the NIE scholars. These assumptions are also the reason why institutions matter (Coase, 1937). Thus, as a critique of the instrumental rationality of the neoclassical theory, North (1990a) stated that it was too simple to only deductively analyze individual's behaviors from fixed models; people frequently find themselves in situations where they have to make choices on the basis of imperfect knowledge, where there are several possible solutions and where there are significant uncertainties of the outcomes of the different solutions (p. 24). For the same reason, individuals are not always self-maximizing because the feedback of information can be so poor that no maximizing alternatives can be found, and their perceptions and motivations are not fixed but can change over time, as it, for example, happened for slavery in the United States (p. 24). Institutions are a way to reduce these uncertainties by affecting the formal and informal behavioral structures to individuals, as North (Ibid) stated: *Institutions exist to reduce the uncertainties*

involved in human interaction. These uncertainties arise as a consequence of the complexity of the problems to be solved and the problem-solving software (…) *possessed by the individual* (p. 25).

There is a direct line from the imperfect knowledge of individuals making decisions within a political and/or economic specter to the positive transaction costs that the new institutional economics has introduced to political and economic science. North (Ibid), defines the costs of transactions as *the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements* (p. 27). Transaction costs therefore contribute to economic and political theory since the costs of 'measuring' the attributes of a policy or product and the costs of defining property rights, policing and enforcing, are not accounted for in the neoclassical and rational choice theories.

It is because transaction costs are positive that institutions are necessary, since they structure the exchange in the market, as North (ibid) puts it: *Institutions provide the structure for exchange that (together with the technology employed) determines the cost of transacting and the cost of transformation* (p. 34), with transformation meaning the actual production of the good or passing of the policy. Thus, it is not only the production of a product or the implementation of a policy that is costly, but also the measurement and enforcement of it, because of people acting upon imperfect knowledge, and because of the costliness of acquiring new information. Furthermore, also because of imperfect knowledge, these property rights, policies and enforcements of agreements are often imperfect as well, therefore, it can be difficult, if not impossible, to rightfully measure and predict the consequences of an agreed policy in the future (North, 1990b). Transaction costs are therefore the key to understand market failures, and on the other hand, the failed attempts to correct them (North, 1990a)

In what has later become the "Coase Theorem", Coase (1960) stated that markets with the closest to zero transaction costs provided the efficiency of a market that the neoclassical model would require in order to succeed, logically the less costly and the

more efficient it is possible to acquire information, the more accurate it is possible to measure and enforce agreements, thus lowering transaction costs would make the market more efficient. It is also the Coase Theorem that provides the basis for North's theory of institutions, because, as mentioned before, institutions play a key-role in lowering the transaction costs, since institutions 'provide the structure for exchange'. The ability of institutions to lower transaction costs affects the success of the economy to correct market failures, hence if institutions succeed in lowering transaction costs it will provide the sufficient efficiency for a competitive market that can induce economic growth in the society (North, 1992).

As mentioned before North distinguished between economic and political markets, yet specifying and enforcing property rights, as well as providing information and reducing macro-economic uncertainty is a political matter, hence the political market has a significant impact on the economic market. On the other hand, interests from the economic market are also often reflected in the political markets (North, 1992a. p. 48). Therefore, the political market affects the transaction costs of both the political and the economic markets, hence, Bates, Sened & Galiani (2014) described NIE, and in particular North's focus on the state, as a change of focus from market fundamentalism to good governance. Instead of a redistributional state, regulating the market only by taxation and subsidies, as the neoclassical economics and rational choice theory proposed, North (1990b) went further and stated that: [P]*olitical markets* (…) *are about the underlying rules that are the incentive structure of an economy – property rights, contracting and credible commitment* (p. 356).

North argued that the political markets are more imperfect and generally characterized by higher transaction costs than the economic market. Politicians and voters also act upon imperfect information, are more prone to subjective ideologies and political agreements are usually imperfectly enforced (North, 1990b). Politicians normally make agreements that will be enforced in the future, which makes the collaboration process much more complicated, thus, institutions provide structures that should reduce uncertainties of collaboration through time and space. As well as the economic market, North (Ibid) argues that an efficient political market depends

on how well politicians can measure and enforce the policies they are passing, or in other words, how close they can come to zero transaction costs (p. 360). Yet, because politicians also act on the basis of imperfect knowledge and subjective ideologies, there is usually a difference in the actual outcome of a policy from the actual intentions at the time it was passed.

Thus, political and economic institutions do not only exist they also change: As mentioned before, North (1992) argues that those entrepreneurs within the underlying organization that possess the sufficient bargaining power can alter institutions if it is in their self-interest to do so. How they can alter the institution depends on their subjective models or ideologies of reality, as North (ibid) states: *The agents of change are the political or economic and political entrepreneurs, the decisions makers in organizations. The subjective perceptions (mental models) of entrepreneurs determine the choices they make* (p. 10). The opportunities to alter the institutional framework can be seen as a result of external changes in taste or most importantly in relative prices; relative prices also include changes in the prices for new technologies or simply information (North, 1990a, p 84). The change can, thus, derive internally from learning or development of skills that further develop the mental models of the entrepreneurs. Many times it happens because of a mix of these internal and external conditions (North 1992).

Normally, when not considering revolutions or foreign invasions, the change happens incrementally and will first appear in the formal rules while altering the informal rules will take longer time, however sometimes it is a change in the informal rules that forces formal change (Ibid p. 12). Since the entrepreneurs are still constrained by the institutions they intend to alter, the institutional change is path dependent; they are biased by the institutional framework that has constrained them. Path dependency, put simply, means that 'history matters' (North, 1990a, p. 1), thus, conditions of the relative perceptions of individuals as well as the power relations of the different groups within a society can be traced back to conditions inherited through history (Dorward et al., 2005). Furthermore, as mentioned before, because of the imperfect knowledge of individuals and because of subjective ideologies of the entrepreneurs

they do not necessarily make an efficient result, thus, institutions do not always develop in a productive manner (Ménard & Shirley, 2011). In consequence, an insensitive to make an institutional change is to correct the failures of the market because of imperfect knowledge and hence transaction costs, yet imperfect knowledge and path dependence also results in the creation of imperfect institutions (North, 1992, p. 13).

To sum up, North's theory of institutions and transaction costs has first of all proved that institutions and history matters in a society. Institutions provide the constrains of opportunities for the different organizations of individuals within a society. Instead of acting through instrumental rationality, the actions of individuals are affected by their imperfect knowledge and ideologies they possess, creating failures in the political or economic markets. Because of imperfect knowledge political and economic actions need to be measured and property rights need to be politically defined and enforced, implying significant transaction costs. Political markets generally work more inefficiently than the economic markets because of a higher influence from ideologies and the 'ex ante' nature of political agreements, resulting in higher transaction costs. Entrepreneurs within organizations with sufficient bargaining power can reinforce or alter the institutional rules if it is in their self-interest to do so. This change normally happens incrementally and with significant path-dependence, meaning that historical conditions are inherited in the new institutional framework. A motivation to make institutional change, can be to correct market failures, but because of path dependence and imperfect knowledge, market failures are rarely perfectly corrected.

2.2.3 NIE in environmental and technological development policies

First of all, North's theory of institutions and transaction costs has shown that the political and economic markets are not perfectly effective but that they tend to fail because of imperfect knowledge. As mentioned in the introduction to this thesis, climate change, which is the principal topic for the CCMEP program, is in economic terms a market failure. In fact, in one of the most comprehensive studies of the future economic impacts of climate change, Stern (2007) describes it as the *greatest example of market failure we have ever seen* (p. 1). The climate represents a public good,

meaning that it is a free resource, accessible to everyone, but, as of date, damaging the climate do not have any significant consequences for those who damage it; pollution from production of energy or goods in a factory represent an 'externality' because those who are producing fail to pay for damages of emissions they are causing on the climate and other human beings (ibid p. 27). The term externality derives from the studies of Pigou (1932), who highlighted the tendency that damages from some actions of individuals are not paid for by the same individuals causing the damage, in result, there is a justification of government intervention in the shape of taxes. This was one of the same proposals provided by the Stern review (2007) on GHG emissions to solve the challenges of climate change.

Another important feature of climate change is the significant uncertainties in the calculations of the future impacts and costs of climate change (Ibid), which makes it difficult for governments and private companies to address. Following the arguments of North (1990a), that institutions exist to reduce uncertainties, institutions and institutional response must be considered a key-element in order to successfully obtain the goals of an environmental policy.

Rather than the term externality, Paavola & Adger (2002) use the broader term interdependencies when describing the external implications of GHG emissions. This term is taken from the same works of Coase (1937; 1960) that founded the transaction cost theory of the new institutional economics. As he argued the externality term is only one-sided, when what is really necessary is to understand the problem in a reciprocal manner (1960, p. 2). In this sense, it will also be harmful for the productivity of the factory, when taxes on GHG emissions are implemented, thus, the dilemma of governance is not that 'one' damages the 'other', but rather 'who' will be allowed to damage 'who'? As an example, a government would also have to consider the possible damages of productivity, hence the economy, that strict environmental regulations would imply. Paavola & Adger (2002) therefore argue that the interdependencies create environmental conflicts because of *incompatible interests in environmental resources* (p. 5), and that this explains the necessity of governance, and therefore institutions, in order to solve environmental problems.

Paavola & Adger (Ibid) also explain environmental governance in relation to transaction costs. They argue that environmental governance consists primarily of administrative transactions and thus non-market transactions, and that, in accordance with the arguments of North (1990), these transactions are costly because of the costliness in the process of information collection, decision making, rule formulation, and so on. Paavola & Adger (2002) furthermore list five arguments for why information is costly:

1. To gather information is costly because of the limited cognitive capacity of human beings.
2. Agents are often self-interested and do not have the willingness to reveal information about their plans or preferences.
3. Resources and goods tend to have multiple attributes, which are not learned immediately but over time.
4. Adjustments require learning, resources and time, unlike the neoclassical models not taking into consideration the context of time.
5. Institutions can also make information costly, if it is in the interest to limit or deny the authority of its agents to have get access to it. (p. 7).

All these arguments are in accordance with the arguments of North but especially relevant to environmental politics. Furthermore Paavola & Adger (Ibid) argue that the success of the different governance solutions depends on two factors: First, do they identify the correct interdependencies, and second, in what manner do they do they affect these interdependencies. As an example, they mention that the measurement of emissions and effluents is often down-prioritized, because it is costlier than e.g. to measure input fees (p. 8). Thus, in general, the transaction cost theory explains why institutional responses and environmental governance of the state are important to meet the challenges of climate change, yet also, if malfunctioning, the state can be an obstacle for efficient solutions, thus other institutional solutions would be needed.

To sum up, the theory of institutions and transaction costs provides a good theoretical basis to this thesis because it explains the challenges of governments in order to arrange an institutional environment that responds to economic and political

dilemmas. At its ground-core is the critique of the neoclassical models of perfect knowledge, where political and economic dilemmas can be solved deductively by fixed models. On the contrary, imperfect knowledge and transaction costs are usually apparent, in particular when focusing on environmental issues such as climate change.

2.2.4 Supply and Demand of External Institutional Models

In a critique of the methodological individualism, resulting in the internal and incremental understanding of institutional change that was presented by North and other RCI scholars, Kurt Weyland (2009) argues that there tend to be a contradiction, when scholars fail to argue how institutions, on one hand, can shape the actions of individuals, while, on the other hand, the exact same people shape and develop the institutions. This contradiction is also called the 'Przeworski trap' given that the dilemma was first presented Adam Przeworski's (2004) paper "Institutions Matter?".

As a proposed solution to this dilemma, Weyland (2009) suggests to look at supply and demand driven factors of external institutional models: He argues that in times of crisis actors seek to search for alternative institutional frameworks from other relevant countries. So, while institutions can change because of a demand from its implemented actors, there is also a significant exogenous, supply-driven pool of ideational ideas from the outside World that affects the institutional outcome in a given time and place.

The examples from Weyland's (ibid) study are the Latin American Wars of Independence and the "Third-Wave Democratization", since they both represent examples of how exogenous institutional ideas have played an important role when significant institutional change has happened in Latin America. On one hand, after the Latin American independence wars, institutional frameworks inspired by the American and French Revolutions were imported in order to implement a new institutional framework, different from the framework of the Spanish Crown. The institutions were thereby implemented because of a "demand-pull" from the new governments of the newly independent Latin American countries. On the other hand, the transitions towards liberal democracies, or the "third-wave democratization", of

many Latin American countries seen in the last decades of the 20th century, were not only a result of a 'demand-pull', but also, to a higher degree, by a 'supply-push' from exporters mainly from developed countries, due to 'Globalization', resulting in increasing integration, initiatives and constrains from the outside World to nation-states (Ibid p. 51).

Rather than refusing completely the theory of North, Weyland's theory about the supply and demand driven factors of external institutional models contributes a better picture of how the CCMEP program is implemented in a larger institutional process of change from the Mexican government, not only because of a 'demand-pull' from the Mexico, in order to import a specific institutional framework, or, more narrowly, know-how about the political technological processes involved in a low-carbon transition, but also possibly because of a 'supply-push' from the Danish government, giving the Danish strongholds in low-carbon technologies.

3.4. Methodological approach: Comparative Politics and case-oriented research

Comparative politics saw a boom of developments in the 1960s and 70s of methodological approaches to exercise qualitative methods on a smaller number of countries, establishing the foundation of the approach for comparison used today (David & Collier, 1993).

In general, comparative politics concerns the comparison of countries, normally referred to as cases, from a different set of approaches depending on the number of cases studied. While a large number of cases can be used in statistical analysis to identify overall global tendencies with the help of quantitative methods, studying a few cases can give a more in-depth analysis using qualitative methods, which is more suitable to identify explanatory factors of a political outcome (Landman, 2000). Explanatory factors and political outcomes are also referred to as respectively independent or dependent variables, given their nature of change over time. Dependent variables are thus the political outcomes that are studied, while the independent variables are the explanatory factors that can explain the political outcome (Ibid).

3.4.1. Most Similar and Most Different Systems Design

Since the 1970s two methodological approaches have been widely used within comparative politics based on the works of D. Hume (1748) and especially J. S. Mill's (1843) methods of agreement and difference, and then further developed by Lijphart (1971) and Przeworski & Teune (1970). These are the most similar systems design, MSSD, and the most different systems design, MDSD. The MSSD is used to investigate how political outcomes differ in countries with similar features, and is therefore useful for comparing countries within a region or with strong historical ties. On the other hand MDSD is used to investigate how countries with different features share certain outcomes, e.g. why some countries with different political features have experienced socialist political revolutions (Landman, 2000).

Both approaches draw a direct line from the key explanatory factors to the political outcome; it is thus the key explanatory factors that trigger the presence or absence of the political outcome. In MSSD the country that possess the same features but does not share the political outcome with the other countries will therefore neither share the key explanatory factors that have triggered it, while in MDSD all the different countries must share the same key explanatory factor to trigger a certain political outcome (Ibid).

3.4.2. Qualitative Comparative Methods

The relationship between the key explanatory factors and the political outcome is also the focus of the more recent methodological developments within comparative politics. The elaboration of the Configurational Comparative Methods, especially C. Ragin's (1987, 2008) crisp-set and fuzzy-set Qualitative Comparative Methods (csQCA & fsQCA), state that rather than a direct link between the explanatory factors and the political outcome, it is a complex combination of causal conditions that triggers the outcome and these can vary from country to country (Engeli, et al. 2014). In other words: instead of stating that X (explanatory factor) equals Y (Political outcome) or the absence of X equals the absence of Y, the political outcome can for different countries be triggered by different sets of explanatory factors (ABCD or ADFG) with a varying impact on the political outcome. Through comparisons of countries it can then

be analyzed whether the explanatory factors are “necessary” or “sufficient” to trigger the outcome (Ragin, 1987).

The csQCA was the first of the QCA methods to be developed by Ragin, in this analysis the country is either a full member of the political outcome or not. This means that, if analyzing for example liberal democracies, a country can either have the value 1 as a liberal democracy or 0 as a non-liberal democracy (Engeli et al., 2014). In change, his later developed fsQCA also takes the degree of the membership into account. This means that instead of using either 1 or 0 as a value of membership in a set, a specific case or country can be partly member of the political outcome analyzed or between 1 or 0, for example 0.9 or 0.4 (Ragin, 2008). Ragin (ibid) uses the example of United States, which might be a full member, 1, of the group of developed countries, but might lack slightly, 0.9, in the group of liberal democracies (p. 30).

These arguments are defining what Ragin calls configurational thinking (Ibid; Blatter & Haverland, 2012): First, social outcomes derive from a combination of causal conditions. Second, different sets of causal conditions can lead to the same outcome, what he in other words calls ‘equifinality’. And third, that there is a difference in the degree and effect of a causal factor in different combinations and contexts, what he in other words calls ‘causal heterogenity’.

Ragin’s QCAs undoubtedly have a strong statistical emphasis, after all it was the idea for Ragin to combine case-oriented qualitative research strategies with variable-oriented quantitative research strategies (Engeli et al., 2014). Therefore an important element in the QCAs is the ‘truth-table’, where the sets and values of attributes are gathered to calculate all the possible combinations of causal conditions that eventually can lead to the outcome (Ragin, 1987).

For this thesis Ragin’s QCAs are useful to compare the causal conditions of both Denmark and Mexico that have led to the political outcome of the CCMEP program. It is, however, not the idea to statistically scheme the sets of conditions for Mexico and Denmark that has led to the outcome of the CCMEP program, yet still the

configurational thinking behind the QCAs are helpful for the analysis and comparison of Denmark and Mexico for identifying motivations for the program, because it is exactly what the configurational thinking can identify: their respective sets of causal conditions, the degree of these causal conditions, and then compare them, to understand how it has led to the outcome of the CCMEP program.

Causal-Process Tracing

An important element in the QCAs and its configurational thinking is to analyze and understand the causal processes leading to the political outcome in each country to gain a sufficient within-case knowledge before making the comparison (Ragin, 2008). While the QCAs focus on the comparison between cases, Causal-Process Tracing (CPT), developed by Blatter & Haverland (2012, ch. 3), seeks to gain within-case knowledge of the causal conditions that leads to the political outcome. CPT is thus closely related to QCA and shares the same approach to configurational thinking: first that the causal conditions should be either sufficient or necessary to trigger the political outcome, and second that more causal conditions lead to an outcome, that they can differ from case to case and that both the causal conditions and the political outcome can differ in their impact or effect (Ibid, 2014).

The CPT largely builds its foundation on Hall's (2003) 'systemic process analysis' where he highlights the importance of the 'timing', 'interaction effects' and 'contexts' in case-study analysis. He draws upon the approaches of strategic interaction theories such as game theory and path dependency from historical institutionalism, because, as he describes, strategic interaction theories often understand the process of political outcomes as *chains of choices that the actors make in response to each other through iterated rounds of interaction* while path dependent theories understand the same as *causal developments of great import for the character for an ultimate outcome often occur early in the long causal chain that leads to that outcome* (p. 384). From this Hall states that the ontological approaches have outrun case-oriented research, and thus approaches for analyzing processes of political outcome need to be specified further.

It is under this foundation Blatter & Haverland (2012) have developed the CPT. They suggest to identify and analyze the causal conditions through a three-level analysis. They compare the work of a case-analyst to the work of a detective, and thus use terms from a detective investigation for their three-level analysis model, more specifically through comprehensive storylines, smoking-guns and confessions (Blatter & Haverland, 2012, p. 81).

The 'comprehensive storyline' is the first step, and serves to present the structural changes relevant for the potential causal conditions to *differentiate major sequences of the overall process and identify critical moments that further shape the process* (Ibid p. 111).

The second step is then to conduct a deeper analysis of the causal processes in the crucial moments that have now been identified. This is to identify the so-called 'smoking-gun' observations that actually have been part of the chain of causal events or have directly led to the final outcome (Ibid).
The third step is then to dig deeper through observations of 'confessions' from major actors implemented in the causal events leading up to the outcome. This is to get an insight into their *perceptions, motivations and anticipations* in connection to the causal events (Ibid).

To sum up, a within-case analysis of both Denmark and Mexico will open the possibilities to identify key causal conditions that have led to the outcome of the CCMEP-program. Their respective approaches towards climate change, energy and foreign trade will be analyzed and compared, since they have initially been identified as key elements in the establishment of the program. Therefore, it is also an important step to analyze why Denmark and Mexico are conducting their respective climate change energy and foreign trade politics to understand what has brought them together to engage in such program.

The CPT can therefore be used to open for the causal processes that have led to the establishment of the program for each country. Some of which are political decisions

in a given time and context, or some that may be specific features of the two countries that have facilitated further cooperation. The QCAs can then serve to compare the set of causal conditions to analyze the conditions they might have in common and the conditions that differ from one country to the other. This will, however, be done in a narrative form, and not as a statistical 'truth table' as suggested by Ragin.

A comparative case study research is suitable for this thesis because it provides *an in-depth investigation of contemporary phenomena in a real-life context, particularly equipped to answer how and why questions* (Blatter & Haverland, 2014 p. 59; From the definition of: Yin, 2009). The research question could easily be re-defined as "how and why are Mexico and Denmark collaborating bilaterally on climate change and energy solutions", where the contemporary phenomenon is the CCMEP program, and to identify motivations for it, it needs to be investigated in a real-life context. The field of comparative politics will then provide the methodological tools, since it offers an analytical framework to compare politics from a specific case or area (Lijphart, 1971).

4. Scientific and Empirical approach and limitations

This chapter will outline the scientific and empirical approach for the thesis, the process from which it has been chosen, as well as it will present some key limitations for the analysis.

4.1. Scientific and empirical approach

The thesis is a case study of the CCMEP program, and surrounding this, a comparative case study of the climate change, energy and trade politics of Denmark and Mexico. Therefore, the scientific approach will be primarily inductive, given that the conclusion of the research question will be based upon empirical research of the explained topics. That said, the theoretical framework serves to give a general understanding of the nature of the program itself and the institutional transitions in which the program is involved, given that some basic conceptualizations of the topics are needed to understand the positions of Denmark and Mexico in a broader context. While putting emphasis on the empirical research, there will therefore arguably also be found motivations for the program out from the theoretical framework itself.

4.2. Empirical sources

The empirical sources for the thesis are generally secondary sources, constituting first and foremost official laws, programs, strategies, statements and documents from the Mexican and Danish governments and its relevant ministries. This is because, when researching their positions on climate change, energy and foreign trade, the first thing to investigate is their official communications regarding these topics. The precaution of this is that the official statements always have to be seen in a context of the political agenda by each government. As an example, it can be in the interest of the Mexican government to officially present itself as a sustainable front-runner, while, if looking at its actions, it might give another picture.

Therefore, the empirical framework will also be constituted of reports, studies and articles from external sources. These will be from organizations relevant for the topic, such as the International Energy Agency, OECD and the World Bank, scientific studies and newspaper articles. These sources will, of course, also undergo a basic source criticism given the contexts in which they are written.

4.3. Primary Sources

An interview with the Danish representative for the program in Mexico, Ulla Blatt-Bendtsen, has been conducted, to get a deeper understanding of the program and some of its intentions (see annex 1 for transcript). Contact was also made to the Mexican authorities, namely SENER and the Mexican Embassy in Denmark, both, however, reffered to the official reports and statements made by the government regarding the topic. The information provided by the government regarding the topic is also considered to be sufficient, given the frequent official reports on the topic and the focus on transparency from the Mexican Government (Secretaría de la Función Pública, 2012).

4.4. Statistical Data

The thesis will also include statistical data and figures about e.g. greenhouse gas emissions, the energy sectors and foreign trade for respectively Denmark and Mexico. This data will also generally be taken from official government statistics on climate

change mitigation, energy and trade, and from organizations that publish frequent statistical reports on the areas of climate change and energy, as for example the IEA and OECD, of which Denmark and Mexico are both members.

4.5. Limitations

For this thesis to be focused around the research question one general limitation need to be accounted for:

Climate change and Energy are complex topics to investigate and can gather many areas of investigation. While having a significant social, political and economic impact, there are also crucial technical and geographical aspects to it. The nature of the program itself is also largely technical, since a large of the program is based upon knowledge sharing of implementation and/or governance of different infrastructural or technological tools. However, this thesis will be focused on the political and economic motivations for Mexico and Denmark to engage in the program, therefore the technicalities for the program and for climate change in general will be treated rather superficially, without stating that these are not also important areas for this topic.

5. Climate change politics of Denmark and Mexico

This chapter will investigate the approaches towards climate change of respectively Denmark and Mexico out from their respective politics on the area and the notion of climate change as a market failure and a global public good. Since the overall focus of the CCMEP program is to support the Mexican climate change goals, some of the key-motivations for the bilateral collaboration between Mexico and Denmark must reside in their respective approaches towards climate change.

5.1. Mexico: Impact of climate change

Due to its geographical position between the Atlantic and Pacific oceans, Mexico is highly vulnerable to changes in the climate. In the past decades, Mexico has already experienced increased temperature- and precipitation-related natural disasters with

profound social and economic impacts on its population as well as its private and public sector (See Figure 1)

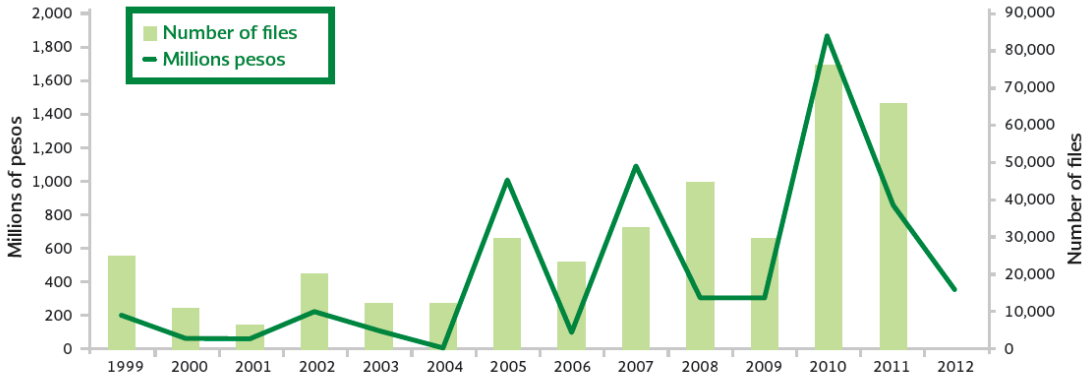


Figure 1. Number of files in the Mexican database on historical climate-related catastrophes and their economic impact. Source: (NCCS, 2013)

Mexico is the 12th most emitting country in the world in terms of GHG emissions, yet they are emitting significantly less than the most emitting countries, the United States and China, furthermore when looking at GHG emissions pr. capita they emit significantly lower than the United States and China, and even lower than Denmark (WRI, 2017).

Mexico has in the past decades experienced a steady economic growth, growth in its population and an increased urbanization. While these factors have meant a general positive outcome on the national economy, increased production, energy and water consumption has resulted in a growing pressure and unsustainable management of the natural resources of the country. Thus, as seen in figure 2, GHG emissions in Mexico are linked to the economic growth they have experienced the past decades.

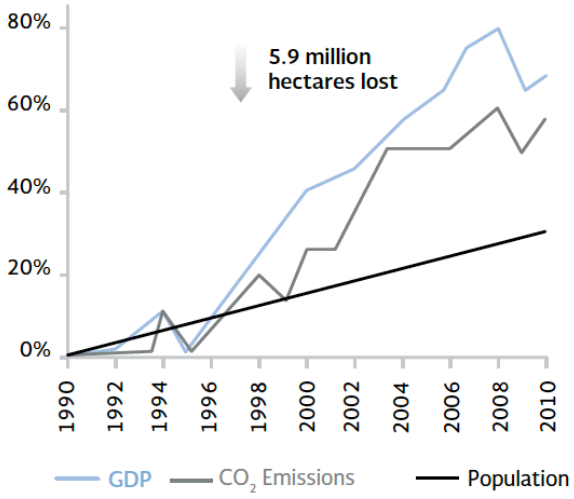


Figure 2. GDP and population growth compared to GHG emissions. Source: (SCCP 2014-2018, 2014)

The largest source of GHG-emission, by far, derives from energy production. Other notable emitting sources are agriculture and industrial processes (see figure 3).

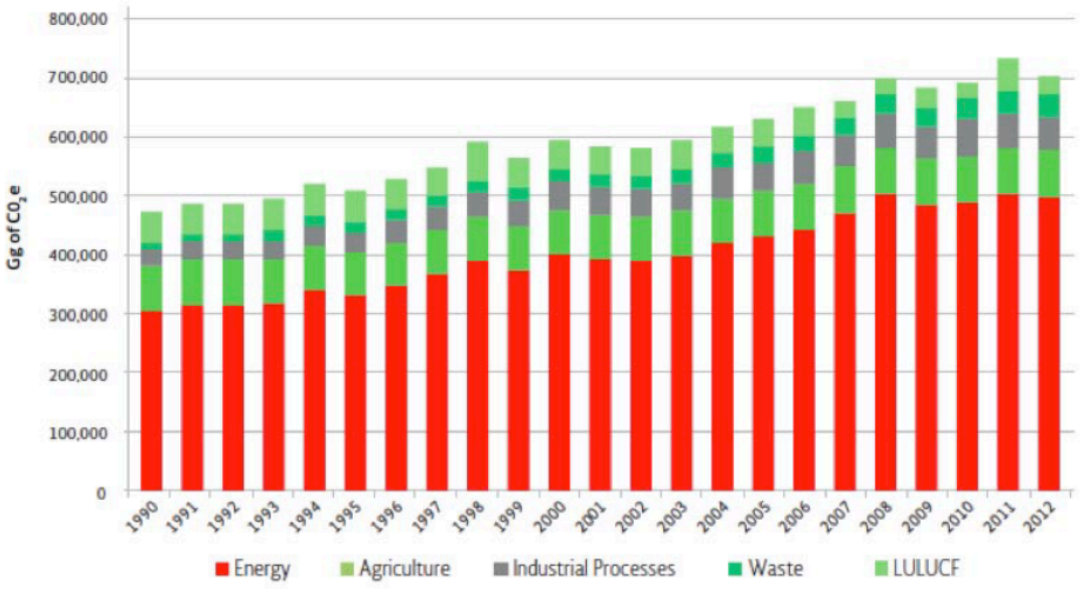


Figure 3. Sources of GHG emissions in Mexico. Source: (SEMARNAT & INECC, 2016)

5.2. Mexico: National approach for climate change

Mexico's national approach for climate change has been developed since late 1980s and has been established through time as a balance between national needs and trends and international cooperation and requirements (Le Clercq, 2016).

The national climate change goals for Mexico in terms of reduction of GHG mitigation are defined in the 'Ley General de Cambio Climático' (LGCC) [General Law on Climate

Change] passed in 2012 under the former Mexican president, Felipe Calderón. The main goals are presented in its article 2, and states that GHG-emissions should be reduced by 30% below a business-as-usual (BAU) baseline by 2020 and 50% by 2050 compared to the 2000-level (Cámara de Diputados, 2012). The current Mexican government, under president Enrique Peña Nieto, has in its 'Intended Nationally Determined Contribution' for the Paris Agreement changed these goals to unconditionally reduce 22% of GHG emissions under the BAU baseline, and conditionally reduce 36% depending on the international support available and the success of a climate change program with its NAFTA partners, the United States and Canada, yet still with goal of reducing 50% of GHG emissions compared to 2000-level by 2050 (SEMARNAT & INECC, 2016).

5.2.1. Story-line for the Mexican national climate change approach

The first advanced political approach for the environment in Mexico was initiated in the late 1980s, more precisely in 1988, when the government implemented the General Law of Ecological Equilibrium and Environmental Protection (LGEEPA). This was the first time that an environmental legislation affected other production-related sectors, such as the energy sector, by enforcing limitations on emissions of different pollutants (Jano-Ito & Crawford-Brown, 2016).

In terms of climate change, the approach and acceptance during the next few years were more of a scientific than a political matter (Pulver, 2006). Yet, this changed gradually: First when in 1995, under president Ernesto Zedillo, Mexican environmental politics got its own secretariat, the Secretariat of Environment, Natural Resources and Fisheries (SEMARNAP), focusing, among other things, on a more sustainable management of the many natural resources in the country (Azuela, 2006). And second, during the negotiations and ratification for the first multilateral agreement under the UNFCCC, the Kyoto Protocol, between 1997-2000, where the Mexican government started to include climate change into its politics of several of its ministries (Pulver, 2006).The international approach for the Mexican climate change politics will be described more profoundly in chapter 5.3.

In 2000, the election of president Vicente Fox, from the conservative National Action Party (PAN) was seen as a small set-back for the environmental politics, given his administration's low priority of that area, which, for instance, meant that 'fisheries' was pulled out of the secretariat of environment and under the Secretariat of Agriculture and Rural Development instead (Ibid).

The election of president Felipe Calderón in 2006 was a major change in the Mexican climate change policy. First, his administration implemented climate change mitigation in its general federal plan document for the term in office, the 'National Development Plan (PND)' from 2007-2012 (Estados Unidos Mexicanos: Gobierno de la República, 2006). Thus, climate change mitigation was implemented with two objectives, to reduce greenhouse-gas emissions and to promote adaptation measures to the effects of climate change, and 11 subsequent strategies (Ibid; part 4.6). The new approach towards climate change made it possible to coordinate the mitigation and adaptation goals with more complex and profounder political mechanisms (Le Clercq, 2016).

- The CICC was the overall entity that coordinated the different mitigation and adaptation objectives for the different secretariats.
- The before-mentioned strategies and objectives from the PND defined the overall goal for the period of Calderón's administration, until 2012.
- A National Climate Change Strategy (ENCC) was established to define and identify measurements, possibilities, the range of emission reductions and further scientific studies to define climate change goals, all on a federal level. This was with a special focus on the mitigation possibilities in the sectors of energy, land-use and forestry. The ENCC also defined the overall international approach for the administration (CICC, 2007).
- The strategical guidelines and objectives found in the PND and the ENCC was then implemented and further specified in the more extensive Special Climate Change Program (PECC) for 2009-2012. This program defined 105 specified targets through 294 measurable goals to fulfill them (CICC, 2009).

- The INE was still supervising the private sector under a special voluntary program, as well as it now also had a more scientific function, developing methodologies and criteria for producing action plans on a state-level (Le Clercq, 2006).

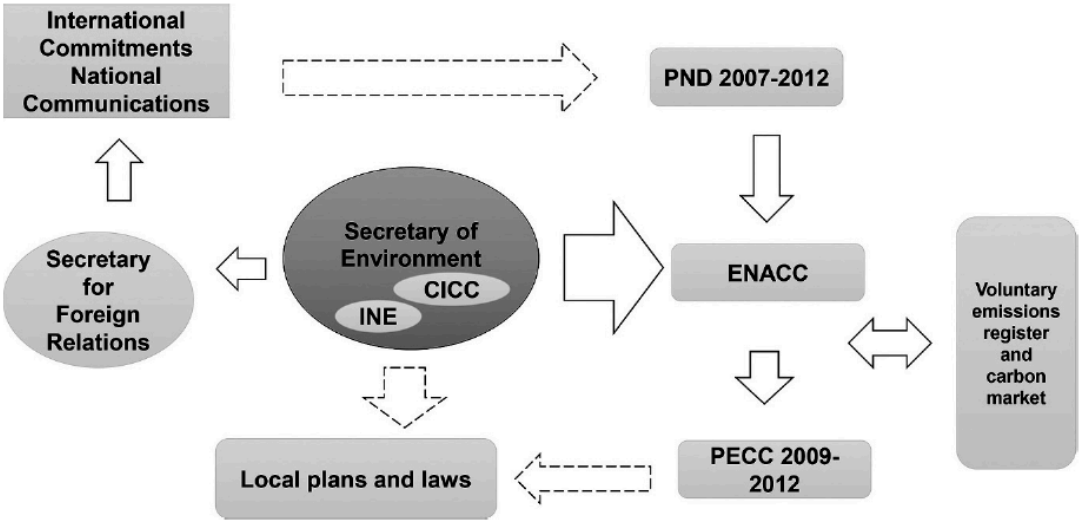


Figure 4. Overview of the institutional setup for climate change mitigation during the Calderón administration, 2006-2012. Source: (Le Clercq, 2016)

The PECC specified both a short-term goal to reduce emissions by 51 million tons of CO^2 compared to a baseline scenario by 2012, and the same long-term goal as the current Peña-Nieto administration of a 50% reduction by 2050 under 2000-level (CICC, 2009). Yet, while these well-defined goals, and the other initiatives, showed that the climate change approach was of much higher priority during the Calderón administration than the previous administrations, some major issues occured: First, they were not legally able to extend the strategies further than by the administration's end by 2012, thus, it was not possible to create an extensive strategy towards the 2050-goals and, in broader terms, general sustainability for the society, furthermore, there was no security that the next administration would follow the path this administration had started. Second, it was only possible to make a comprehensive strategy at the federal level, not locally at a state or municipality-level and the methodologies for mitigation proposed by the INE were also only directed at federal-level activity. Third, also in order to meet the long-term mitigation goals, a different

institutional framework with new planning and other instruments towards the market was needed, this also included new ways to access information about climate change mitigation, both scientific, political and administrative. And forth, the comprehensive environmental plans were in direct conflict with a growing industry and the country's energy production based on oil (Le Clercq, 2016).

These dilemmas, as well as a growing pressure from experts and NGOs involved in the environmental legislation processes in Mexico, started a domestic, incremental process towards the creation of the LGCC: There was now a recognition of both the seriousness of the issue and the current institutional weakness among political entrepreneurs that made possible the opportunity to establish a consensus towards institutional change and long-term planning. The process towards the LGCC thus went into a take-off phase through 2010 and 2011 when legislators in the Mexican congress started to propose several more innovative climate change related bills than was seen before (Ibid).

During this take-off phase the Mexican congress found itself between three different scenarios: 1) To support the existing framework implemented by the Calderón administration, which also had the long-term goal of reducing 50% GHG emissions by 2050, but would not legally be able to make a plan nor strategy after the end of the administration in 2012. 2) To alter and strengthen the exiting environmental law, the LGEEPA, from 1988, in order to implement mitigation and adaptation programs specifically concerning climate change. This approach would consider climate change as only an environmental challenge and was the option that for the most time between 2010 and 2012 was mostly supported by both the private sector and the Mexican congress. 3) The option of the LGCC, to create a specific climate change law and consequently create an inter-ministerial institutional framework specifically directed at climate change instead of implementing climate change in the environmental law. This option was supported strongly by experts and NGOs, but met resistance both from within the government from some of its agencies and from the private sector (Ibid p. 517).

When it was the third option that finally achieved the majority, it was because of a combination of different factors: one factor was the persistence of key-politicians that were in favor for the LGCC and were able to turn other politicians with lesser interest in the climate change subject. Another factor was that some government authorities that had been critical of the LGCC were allowed to change some elements in the law in favor of their areas and some parts of the private sector that would otherwise be affected by the law. And at last, the powerful Institutional Revolutionary Party (PRI) that in 2000 had lost the presidential power for the first time in more than 70 years, saw the LGCC as an opportunity to gain popularity by presenting it as their idea (Ibid p. 518).

5.2.2. Mexican national climate change approach today

The current Mexican approach to climate change is defined in different strategies, programs and laws. The legal foundation derives from the LGCC, a specified program for the years of the current Peña Nieto administration is presented in the recent PECC 2014-2018, the short-, middle- and long-term strategy until 2050 is determined in the new ENCC published in 2013 and with some specifications and adjustments in the Mexican INDC and mid-term strategy to the Paris Agreement from 2016.

The LGCC was approved in April 2012 and thereby represents the legal framework of the Mexican approach towards climate change today. The LGCC provided some significant changes to the approach by the Calderón administration, though it presented the same goal of a 50% reduction of GHGs by 2050 compared to the 2000-level and a 30% reduction below a BAU-baseline by 2020, yet conditioned on the willingness of financial support from the international society (Cámara de Diputados, 2012). The 2020 goal has since then been changed in Mexico's recently submitted INDC to the UNFCCC in accordance with the Paris Agreement, where the Peña Nieto administration has presented two NDCs, one contribution to unconditionally reduce 22% below a lower BAU-baseline by 2030 and another, more ambitious contribution to conditionally reduce 36% below the BAU-baseline by 2030 depending on a coordinated response on methane-emissions from the NAFTA countries, and internationally that all other countries also fulfill their INDCs as well (see figure 5).

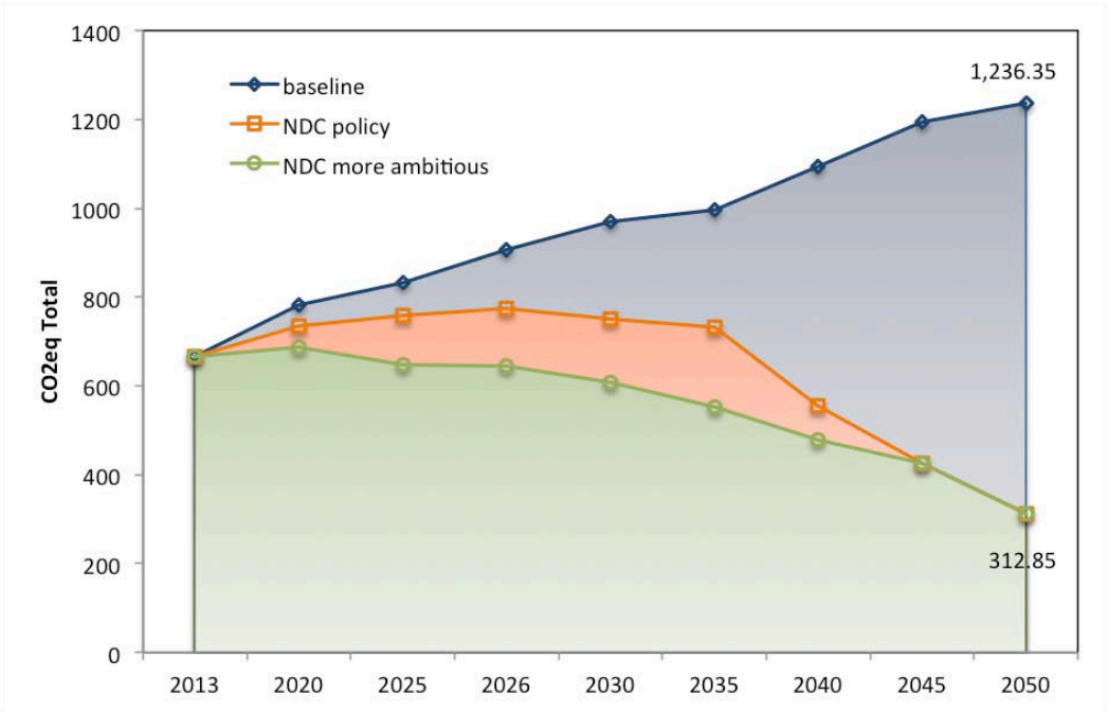


Figure 5 Mexican two NDC scenarios compared to BAU-baseline. Source: (SEMARNAT & INECC, 2016).

Mexico's current approach to climate change, both nationally and internationally, has been significantly influenced by the report 'The Economics of Climate Change in Mexico" published by the Mexican Secretariat of Finance (SHCP) and SEMARNAT in 2010. The report concludes, on the basis on three different scenarios, that it for the Mexican economy will be at least 50% more expensive by 2100 to not take any action than to implement a substantial long-term climate change strategy and participate in an international agreement that takes into consideration the differentiated needs of nations considering their geography and economy (SEMARNAT & SHCP, 2009), an estimate that even has been criticized for being too conservative (Estrada, Papyrakis, Tol, & Gay-Garcia, 2013). The report suggests that the Mexican government should define various long-term mitigation and adaptation strategies through many different political areas. They should furthermore seek additional resources in terms of international funds and organizations, in order to set and achieve more ambitious targets. One of the suggestions from the report is the creation of a pricing structure to support the innovation and diffusion of technologies as well as to prevent unsustainable management of resources and consumption (SEMARNAT & SHCP, 2009).

The LGCC also established a new institutional framework specifically concerning climate change, coordinated through the National Climate Change System (SINACC): The INE was changed so it now was focusing not only on ecological challenges for Mexico, but also specifically on climate change issues, when developing sector analysis and methodologies, and thereby changed its name to the National Institute of Ecology and Climate Change (INECC). The Inter-Ministerial Commission on Climate Change (CICC[1]) was created, collecting 13 federal ministries in one commission to develop and implement national policies concerning climate change adaptation and mitigation, both sector-specific and cross-sectorial, to approve the mid- and long-term ENCC and participate in the elaboration and implementation of the future PECCs. The Climate Change council (C3) was created involving actors from the academic, private and social sectors, acting as an independent body to advise and recommend for policies to CICC and to conduct public consultation in order to promote social participation. At last three different political bodies are included in the SINACC to create policies, strategies and goals on different local levels. The Mexican Congress on a national level, the State-authorities on a state level and the National Association of Municipal Officials on a municipal level.

Figure 6 Institutional framework under the SINACC. Source: (SEMARNAT & INECC, 2016)

[1] Please note that the CICC is called ICCC in figure 5 due to its English abbreviations. The CICC is from its Spanish abbreviations as can be seen in the abbreviations-list.

One of the most significant features of the LGCC was that it made it possible to elaborate legally bounded long-term strategies, lasting long after the end of the Calderón administration in 2012. The law therefore determined that the next ENCC should be elaborated as a short-, mid- and long-term strategy instead of only until the end of the presidential period as the previous ENCC by the Calderón administration that only could last until 2012 when Calderón was out of office (Cámara de Diputados, 2012). The strategy was elaborated and published the year after in 2013 under the newly elected Peña Nieto administration and defines the strategy for respectively the next 10, 20, and 40 years until 2050 where Mexico should reduce 50% of its GHG emission compared to the 2000-level (NCCS, 2013).

The new long-term ENCC 10-20-40 presented eight pillars of action in order to meet the challenges of climate change and develop 'green growth' in Mexico. In accordance with OECD, 'green growth' can be defined as: *fostering economic growth and development, while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies* (OECD, n.d.). The eight pillars in the ENCC 10-20-40 were aimed at reducing vulnerabilities in the social and infrastructural sectors and protecting the Mexican ecosystems, as well as providing a plan for more sustainable cities, agriculture and forestry and improving the health and well-being of the Mexican population by reducing short-lived climate pollutants (NCCS, 2013 p. 20).

Yet, the main contribution in order to reduce GHG emissions was the plan to transform the energy sector towards more clean energy and improved energy efficiency (Ibid). The strategy thus confirmed the goal to produce 35% of the Mexican electricity production from clean energy sources within the first 10 years, 40% within 20 years and 50% within 40 years (Ibid pp 22-23). This was in accordance with LGCC and the goals for the Mexican energy reform that will be explained in greater detail in chapter 6.

The most recently published climate change documents by the Mexican government, the INDC and mid-term strategy for the Paris Agreement, are built largely upon the

ENCC 10-20-40, since they both set the same time-frame aiming towards 2050. Yet they feature the major difference of the regulated mid-term mitigation goals as explained before in this chapter (see figure 4). Another important specification in the mid-term strategy is that GHG-emissions should be decoupled from economic growth by 2026, meaning that economic growth in Mexico should not be dependent on fossil-fuels at that time (SEMARNAT & INECC, 2016).

Both in the ENCC 10-20-40 and the mid-term strategy, the Mexican government makes it very clear that mitigation and adaptation efforts are not to counterbalance economic growth, quite opposite they continuing economic growth should facilitate and even drive the adaptation and mitigation strategies set by the Mexican government and other more local political authorities (Ibid). For this reason, the Mexican government also highlights that it is a developing country with financial limitations and thus urges a continuative and comprehensive multilateral agreement and solicits international help in order to fulfill its targets, mentioning indirectly the CCMEP program when they highlight the financial support Mexico has already received through bilateral collaborations with other governments (NCCS, 2013).

5.3. Mexico: The international context

In the international context, Mexico has been, and still is, an active player in its approach to climate change. As a middle-income and developing country, Mexico does not hold any decisive economic or military power to act on their own. Therefore, their approach is to pursue comprehensive multilateral solutions and trade integration in the international forum. As Edwards, Roberts, & Lagos (2015) put it: *they see respect for a rules-based international system based on multilateralism and cooperation as vital* (p. 137).

Yet recently, starting with the arrangement of the COP16 in Cancun, Mexico has changed into a front-runner for developing countries on the global political scene for climate change, following and even going beyond multilateral obligations of climate change mitigation and adaptation, by setting ambitious domestic targets and encouraging other countries to follow suit.

5.3.1 Story-line of Mexican international climate change politics

In terms of climate change, it was in 1997, during the negotiations for the first multilateral climate change agreement under the UNFCCC, the Kyoto Protocol, that climate change began to be a political issue in Mexico rather than only a scientific issue, while at the same time climate change was getting increasing international attention both publicly and politically (Pulver, 2006).

Mexico ratified its participation in the Kyoto Protocol as a non-annex I party in 2000, meaning that they were not legally bounded by any mitigation restrictions given their status as a developing country. Their entrance in the Kyoto Protocol meant that they would also enter the Clean Development Mechanism (CDM) facilitating a low-carbon transition and possibly facilitate investments from developed countries, especially for Mexico the United States, yet as disagreement occurred between the US and the EU in late 2000 and the US pulled out of the Kyoto Protocol in 2001, they left the CDM with high uncertainties for the funds that should provide Mexico with investments and projects from the US (Ibid). As described in chapter 5.2.1 this was during the time of the Fox administration, which is considered a smaller set-back in terms of the Mexican climate change politics, a set-back directly influenced by the resignation of the US in the Kyoto Protocol (Ibid). In 2002 the European Union ratified the Kyoto Protocol, providing another comprehensive option for investments under the CDM for Mexico.

The change of agenda by the Calderón administration, from 2006-2012, to implement climate change in the agenda of the domestic politics can also be seen in relation to the Kyoto Protocol, where the commitment period was from 2008-2012 and participating countries should strive to reduce 5% of emissions under the 1990-level. Mexico was furthermore the only non-annex party to contribute with up to five national communications to UNFCCC as required by the Kyoto Protocol (Le Clercq, 2016).

During the Calderón administration, Mexico also hosted the 16th of the annual UNFCCC 'conference of the parties' (COP)-meetings in 2010 in Cancun. This was the

year after the same conference had been hosted by Denmark in Copenhagen. While the 'COP 15' in Copenhagen was seen as an overall failure in order to agree upon a unified plan for all nations in the UNFCCC, the 'COP 16' in Cancun was seen as an overall success because it relaunched the climate negotiations between the countries and established a green fund for developing countries (Ibid). The national Mexican political approach to climate change and the reputation of Calderón as a political leader of international standards could thus benefit from the widespread international attention that came along with the COP 16 (Ibid). There is also a direct line from the COP 16 in 2010 to the domestic process of renewing the climate change approach in Mexico between 2010-2012 as explained in chapter 5.2.1 that led to the implementation of the LGCC in 2012, Mexico thus became the first developing country to implement a comprehensive climate change law, transforming them into a leader for climate change politics in Latin America and amongst developing countries in general (Edwards et al., 2015).

This has continued under the current Peña Nieto administration. In terms of the recently established Paris Agreement, under the UNFCCC, Mexico also played a significant role, especially in the perspective of their status as a developing economy. More than being the first developing country to implement an actual climate change law, Mexico was also the first of the developing countries to submit its INDC in March 2015, even before the COP 21 in Paris where the agreement was reached. The following year, in September 2016, Mexico ratified its participation in the Paris Agreement, and in June 2017 the Mexican government reaffirmed, despite the, then recently, pronounced withdrawal from the Paris Agreement of the United States (INECC, 2017).

5.5. Denmark: International approach for climate change

The Danish international approach for climate change can be seen in relation to the activist approach of the foreign policy different governments have pursued since the end of the Cold War in the end of the 1990s. In general, in an increasingly globalized world, Denmark is increasingly affected by circumstances that are not nationally determined because of the increasing globalization, and as a small country, Denmark

has been obliged to follow an activist approach in order to gain influence and not leave the scene entirely to be influenced by larger superpowers (Wivel, 2009). Furthermore, Denmark is, for its domestic climate change policy, internationally seen as an entrepreneur, mainly because of focus on renewables energies and energy efficiency, which will be explained further in chapter 6, and its ability to establish 'green growth' for the Danish society (Wivel, 2013).

Climate change politics has gained prominence in Denmark during these years. This is in spite of the relatively small affect climate change will have on Denmark, compared to other parts of the world, and the high levels of institutional, infrastructural and economic capacity to adapt to climate change in order to diminish the risks (Wivel, 2009).

The international climate change approach followed by Denmark should rather be seen in the context of an overall activist and value-based foreign policy approach particular to the Nordic countries and grounded in their welfare-states, adapted to the constrains of the framework conditions provided by an increasing Europeanization, international institutionalization and globalization (Wivel, 2013). Yet, in recent years the focus has gradually changed in order to pursue and expand economic interests, or at least combining values and economic interests in one common and coordinated approach (LTS International, 2015).

5.5.1. Story-line of the Danish international climate change politics

Environmental and climate change politics have accounted for a significant part of the Danish activist approach for its foreign policy since the end of the Cold War. The promotion of international collaboration on environmental projection was first mentioned in the report elaborated by the Commission of Foreign Affairs created in 1989 in order to define the Danish foreign policy approach for the coming decade (Udenrigsministeriet, 1990). Environmental projection was mentioned along with subjects such as projection of human rights, development aid and gender equality as well as the fight against terrorism and drug trafficking (p. 15). At this time, environmental projection was mostly directed at developing countries and related to

foreign aid, thus the then Minister of Foreign Affairs and head of the Commission, Uffe Ellemann-Jensen, mentioned in his comments to the report that foreign aid should be given with 'extensive requirements of environmental protection and consistent involvement of women in the development work' (Ibid p. 39).

During the 1990s Denmark also became increasingly integrated in the multilateral institutionalization of climate change mitigation. First of all, the deeper integration of the EU through the establishment of the single market and its following treaties meant that some environmental restrictions were implemented to its member countries (Boye & Ege, 1999). Regarding foreign policy, the European Union conducted on one hand a unified approach when operating in larger multilateral fora, and on the other hand let its member countries act on their own under the frames set up by the European Union. Denmark was within the EU seen as an entrepreneur on the areas of environment and climate among with Germany, Finland, Sweden and Holland and now had a bigger and more powerful platform to conduct its activist approach both to the other member countries and to the outside world (Wivel, 2013).

Within the framework of the UNFCCC, Denmark ratified, together with the EU, both the UNFCCC and the Kyoto Protocol. In its second communication to the UNFCCC, Denmark highlighted the importance of multilateral collaboration on the issue, especially for developed countries to reduce their CO2 emissions (Ministry of Environment and Energy, 1997). During the 1990s the environmental and climate related issues became an integral part of the Danish International Development Agency (DANIDA), focusing on environmental projects and support for developing countries, particularly in Eastern Europe, in accordance with the recommendations of the Commission of Foreign Affairs in 1990 (Wivel, 2013). During the presidency of the European Parliament in 2002, Sustainable development was one of the top priorities and in its foreign policy strategy climate change was among with freedom of speech the main subjects (ibid).

In 2005, during the administration of prime minister Anders Fogh Rasmussen and under charge of the minister for environment, Connie Hedegaard, the Danish

government presented the 'Danish Climate and Development Action Program' that for the first time established a coordinated approach of climate mitigation and adaptation strategies together with development strategies for developing countries (Udenrigsministeriet, 2005). The program thus raised the policy profile of climate change incorporated in the development aid provided by DANIDA and unified the strategical framework of support for developing countries to climate change. The program should help to elaborate climate profiles for partner-countries in order to prepare for adaptation and mitigation efforts and should both provide high-level consultancies, develop country strategies, support sector programs and technical consultations (Ibid). Furthermore, in 2007, the establishment of the Ministry for Climate and Energy and Denmark now assigned a higher priority to the climate area and that Denmark now could present a stronger profile on the climate area internationally (Wivel, 2013).

At first glance, the international peak for the Danish international climate policy would be the status as host for the COP 15 in Copenhagen in 2009 where a unified answer to climate change for the countries of the UNFCCC was expected. Yet the negotiations collapsed and the non-bounded 'Copenhagen Accord' that came out of the conference was met with scathing criticism, especially from some developing countries that felt neglected in the process (ibid). Yet, just before the COP 15, a smaller win for the Danish international climate policy was gained with the minister of climate and energy, Connie Hedegaard, being announced as the first climate commissioner of the European Union.

5.5.2. The Danish international approach for climate change today

Two things contribute to the Danish approach for climate change towards developing countries today:

First, the establishment of the Copenhagen Accord meant that developed countries agreed to provide USD 30 billion from 2010-2012 to so-called 'fast start finance' in developing countries, in order to trigger mitigation and adaptation actions. Before reaching the Copenhagen Accord at the COP15, the Danish government had

established the 'climate envelope' committing DKK 1.5 billion from 2008-2012 to climate-related development projects (DANIDA, 2016). With the establishment of the Copenhagen Accord, the climate envelope became the mechanism for Denmark to finance its contribution to the fast track finance-plan (DANIDA, 2015).

Second, the presentation of the development strategy 'A Right to a Better Life' in 2012 meant a change of approach in the strategies for development put forward by the Danish government. A main focus for the program was to ensure economic growth and create jobs in its development strategies, not only for the developing country, but also for the Denmark (DANIDA, 2012). The strategy opened for more further involvement of the Danish private sector in the development process and for the first time in a Danish development strategy, green growth was incorporated as an exclusive part of the strategy (Ibid). The development strategy was followed by a more specific strategy on natural resources energy and climate change, 'A Greener World for All' in 2013. One of the main priorities of the strategy was the energy sectors, where the government would share knowledge on renewable energies and energy efficiency. The strategy was directed both at the less-developed countries and some middle-income countries, Denmark had engaged with before, namely South Africa and Vietnam (DANIDA, 2013). Since middle-income countries had a high mitigation potential, support would be given for: *nationally appropriate mitigation actions either through international initiatives or bilaterally* and would only be given: *when of particular strategic interest to Denmark and the partner country* (Ibid p. 17).

These two strategies meant a change in approach for the Danish development policy, and for its international policy on climate change in general. From a more outwards and value-based approach during the 1990s and 2000s when addressing climate change, the new strategies also had an inwards focus of Denmark preserving its economic interests by seeking commercial opportunities and create domestic jobs (LTS International, 2015).

5.6. Collaboration between Denmark and Mexico on climate change

Collaboration between Denmark and Mexico on climate change can be dated back to the Calderón administration, when Connie Hedegaard was minister of climate and energy in Denmark. In between the COP 15 in Copenhagen, Denmark in 2009 and the COP 16 in Cancun, Mexico, the collaboration on climate change between Denmark and Mexico was initiated, both in terms of the negotiation process during the COPs and in terms of the administrative arrangements of hosting the conference happened in close collaboration between the Danish minister for climate and energy and later European commissioner for climate action, Connie Hedegaard and the Calderón administration (Interview, Blatt-Bendtsen, 2017[2]). In between the two COPs, Denmark and Mexico also decided to initiate a collaboration on energy efficiency, what later developed into the CCMEP Program (Regeringen, 2013).

In 2012, Denmark among with Mexico and South Korea established the Green Growth Forum (3GF). The forum aims to strengthen collaboration between public institutions, NGOs, investors and businesses in order to enhance long-term and inclusive green growth (3GF, n.d.). The forum has later been joined by other countries such as China, Chile and Vietnam, and private partners such as the Danish companies, Danfoss, Vestas and Novozymes and the Mexican bank Banamex.

Focusing on the CCMEP program, this is the most comprehensive and direct collaboration between the two countries until today. The initiatives by the program were mostly conducted with SENER for energy-related climate change solutions, which will be explained in chapter 6, yet a few projects were also carried out more specifically on the area of climate change in collaboration with SEMARNAT.

First, the CCMEP program conducted projects to support SEMARNAT in tracking the progress for the PECC 2014-2018 (UM, 2017f). This was done by developing methodologies for calculations of emissions reductions to harmonize with the methodologies used in the ENCC and mid-term strategy.

[2] See Appendix 1 for transcript

Second, the CCMEP program supported INECC's Coordination of Evaluation unit in the adoption and implementation of a Theory of Change for its overall approach, in order to perform specific climate policy evaluations (UM, 2017).

And third, the CCMEP program assisted SEMARNAT in its promotion of a closer regional south-south cooperation with other countries in Latin America and the Caribbean, in order to conduct workshops for the sharing of experiences concerning the contributions to the Paris Agreement and adaptation and mitigation practices (UM, 2017d).

5.7. Discussion

This section has explained the processes that has led to, on one hand, for Mexico, the increased awareness and institutionalization of climate change issues domestically, which has walked hand in hand with an increased integration in an increasingly stronger international consensus of action towards climate change issues, mainly through the multilateral agreements within the UNFCCC, and on the other hand, for Denmark an increased integration of climate change in its international development policy for development aid, which in recent years has been increasingly coupled with an attention and protection of domestic economic interests, to enhance domestic job creation and growth.

Applying North's theory of institutions and transaction costs, it can at first be stated that climate change in itself is an issue involving significant transaction costs: it is an issue that, through a long range of time, with certainty will impose significant costs on societies everywhere in the world, and significantly those that are most vulnerable to the changes both geographically and economically, yet also, it involves significant uncertainties of what exactly the consequences will be, and consequently how much they will cost (Stern, 2007). Economically speaking, the uncertainty aspect, the time aspect and the geographical and economic differences of countries, mean that it makes it difficult, if not impossible, to, in a perfect manner, deductively apply economic supply and demand or cost-benefit models. Following Paavola & Adger's

(2002) integration of the transaction cost theory into environmental politics, transaction costs are applied because of the costliness of information, self-interested agents holding back information, resources and goods have multiple attributes that are not learned completely from the start, adjustments require leaning, resources and time and institutions in themselves can make information costly, if it is in the interest to limit or deny the access to it.

For Mexico, increased awareness of the climate change issue, both internationally and domestically, has meant an increasing institutionalization of the issue in the country. The LGEEPA that was the main environmental law until 2012, posed some environmental restrictions on the public and private sector, but did not concern specifically climate change, and did not encourage any specific transformation towards a low-carbon society. It was not until the formation of the Calderón administration in 2006 that climate change explicitly became an official part of the national politics in Mexico, yet the problem at that time was that goals and strategies could only with certainty be applied for the time the administration was in office.

Thus, at the time when SHCP and SEMARNAT released *The Economics of Climate Change in Mexico*, stating that within this century, inaction towards climate change would at least be 50% more costly for the Mexican society than mitigating and adapting towards it, there was no political tool to develop a long-term strategy that would apply across the change administrations. As a result, climate change became institutionalized in the LGCC and the SINACC was created.

Making it possible to make a long-term response to climate change can also be seen in relation to transaction costs: The LGCC made it possible to make a long-term strategy, which later became the ENCC 10-20-40, in order to make clear long-term response to the different issues and, as a consequence, economic uncertainties that climate change would impose on the Mexican society in the future. The emphasis on economic growth in the ENCC, and, through 'green growth' that this should rather be a catalyst for climate change mitigation and adaptation than an impediment for it, also shows that the Mexican government rather sees its actions as an interdependent

problem rather than an externality, in accordance with the interpretation of Paavola & Adger (2002). For this, the establishment of the SINACC can be seen as a response: The SINACC established a far-reaching inter-institutional setup, involving almost every Mexican ministry, states, municipalities, scientists as well as the private and public sector, in order to develop strategies that was, as efficient and profitable as possible for all stakeholders.

Also, internationally, Mexico has been increasingly integrated in a multilateral institutional set-up, mainly through the UNFCCC, first with the Kyoto Protocol and next with the Paris Agreement. As explained in chapter 5.3., Mexico, as a middle-income country, does not hold any decisive or military power to act on their own, therefore integration in multilateral institutions that can provide a consensus is vital for Mexico. For climate change, Mexico explicitly express that they need support and foreign investments from the outside world, in order to accomplish their goals for climate change. Thus, integration in the multilateral climate change forum under the UNFCCC, a relatively solid consensus within the UNFCCC and the UNFCCC's different mechanisms that ensure support and investments for developing countries in their effort to cope with climate change, also creates certainty and reduces transaction costs for Mexico in their process towards its climate change goals. Furthermore, Mexico, because of their significant size of economy, and their early and active focus on climate change, is seen as a leader of developing countries within the multilateral climate change forum. For Mexico, the UNFCCC is therefore a forum where they can gain influence, especially given the focus the UNFCCC puts on developing countries.

As for Mexico, the UNFCCC is also for Denmark a multilateral forum to get political influence. As a small, yet wealthy, country, neither Denmark possess the sufficient power to be decisive on their own. Yet, their stronghold for green growth and their long-lasting activist approach for environmental support to developing countries has given Denmark a status as an entrepreneur in the multilateral climate change forum. While Denmark possess the institutional capacity to address climate change, globalization makes them increasingly vulnerable to external circumstances. Thus, other than providing Denmark with a voice to be heard on the international scene, a

relatively solid consensus in the UNFCCC also provides security for the Danish society. Furthermore, Denmark has increasingly turned its attention to domestic economic interests in their development strategies, so that Denmark's strongholds within its energy sector and for green growth in an increasing manner have been a strategy to also create jobs and enhance economic growth in Denmark domestically, this will be treated further in chapter 6 and 7.

The statuses of both Denmark and Mexico as leaders for respectively developed and developing countries have also directly influenced the formation of the CCMEP program. Thus, as explained, it was in between the COP 15 and 16 that the Danish-Mexican relations on climate change was established. This also provides the first motivational aspect to the CCMEP program: Their approaches to the multilateral climate change consensus are notably alike, as is their opinion that climate change should be handled through comprehensive multilateral agreements, yet for two very different reasons. While Denmark conducts an outwards approach by integrating climate change in their development programs, the approach for Mexico is more of an inwards nature, requesting support from the outside world in order to reach its climate change goals. In this sense, Denmark and Mexico provides a good fit to each other in their respective approaches. In accordance with Weyland's supply and demand driven factors for institutional frameworks, Mexico has through the LGCC created a demand-pull for procedures and practices for their new institutional framework to function, while Denmark is in possession of a supply-push for these procedures and practices.

Looking more specifically on the CCMEP program as explained until now, it can also be seen that the projects that has been conducted generally concern the sharing of best-practices and know-how in order to measure GHG emissions and process-tracking for the PECC. The CCMEP program therefore positions itself more in the process than the actual execution of the Mexican climate change actions. and by that, when only focusing at the part of the program concerning climate change, the very nature of the CCMEP program itself is to lower transaction costs, by providing information about measurement models and process-tracking that would otherwise

be costly for the Mexican government, explaining one of the motivational aspects for Mexico to engage in the program.

6. The Mexican Energy Reform and the Danish contributions

The main focus of the CCMEP program is the Mexican energy reform and its transition towards renewable energies, which is also an important part of the Mexican ENCC for the Mexican climate change goals to be fulfilled. Furthermore, the energy sector represents one of the administrative strongholds for Denmark. This chapter will explain some of the reason why Mexico has implemented the reform, the reform's contents relevant to the CCMEP program, and the Danish energy model, in order to identify motivations to engage in the program related to the energy transition of the Mexican energy sector.

6.2. The Mexican Energy Sector

The Mexican energy reform was implemented during 2013 and 2014 under the current Peña Nieto administration and implied significant changes in the Mexican energy sector. To advance and modernize Mexican energy production and distribution and lower energy prizes, the nationalized energy sector and oil production were opened further for competition and foreign direct investments (FDI). The energy production should be more diversified to depend less on oil and natural gas, and more on renewable energies, given the growing demand on energy in Mexico due to economic and population growth and the falling prices on oil and the goals on climate change determined in the LGCC (Barrie, 2016).

6.2.1. Time-line of the Mexican energy sector

In history, the Mexican energy sector has been largely influenced by two things: First, the discovery of oil in the Mexican soil, and second, the Mexican Revolution that determined that all subsoil resources were of national property.

Distribution of electricity and extraction of oil was both initiated around the start of the 18th century, under the *Porfiriato*, the controversial regime of Porfirio Díaz (1876-1911). The *Porfiriato* was controversial because of the, on one hand, repressive and

dictatorial approaches of the regime that secured the rule of Díaz for three decades, but, on the other hand, also the significant infrastructural development Mexico experienced during the same years, generally through FDIs from private companies (Kirkwood, 2000). This was also the case for both the oil and the electricity industry in Mexico. Distribution of electricity had initiated at the end of the 1800s, and at the start of the 1900s smaller private companies controlled different regional parts of Mexico (Jano-Ito & Crawford-Brown, 2016).

Commercial oil production initiated in 1901, but it was not before the capitulation of Díaz and at the start of the Mexican Revolution (1910-1920) that oil production was ready for exports (Vietor & Sheldahl-Thomason, 2017). During the Mexican Revolution, foreign firms largely controlled the oil-reserves, and played a big role in financing the Revolution. This meant that they could keep the reserves, even though the article 27 of the Mexican Constitution, implemented in 1917 as a consequence of the Revolution, determined the state-ownership of all subsoil resources. The significant investments in the Mexican oil sector made Mexico the second large oil producer in the World by 1920 (Ibid).

While the Mexican Revolution was settling, private companies kept on dominating the energy sector both for oil and electricity, however both sectors met significant challenges. For the oil sector the Mexican constitution proved to be a big challenge for the foreign companies. Article 27, which determined the Mexican dominance of the subsoil resources, and article 123, which protected Mexican labor, justified an increasingly rising labor-resistance against the foreign companies (Kirkwood, 2000).

This escalated at the end of the 1930s under President Lázaro Cardenas (1934-1940) who is known as the president who really settled the left-wing ideas that characterized the Mexican Revolution (Ibid). Using the articles 27 and 123 of the constitution Cardenas nationalized the Mexican oil reserves and created the state-owned oil company *Petroléos Mexicanos* or PEMEX to manage them. He, however, made it possible for PEMEX to contract private companies for other activities such as exploitation and exploration. Cardenas also made it possible for the government to

outsource work such as building of pipelines, refining and distribute gasoline to third parties. The nationalization was later further enforced through reforms in 1960 and 1983, so that PEMEX had the exclusive right of all industrial activities without intervention from third parties (Negroponte, 2013). Cardenas' model of contracting third parties under state-ownership is, however, again used under the recent Energy Reform from 2013 (ibid).

The Cardenas administration also had a significant impact on the Mexican electricity sector: After the Revolution electricity coverage was sparse and governed by regional private monopolies that failed to meet the increasing demand for electricity. They also decided the tariffs without government interference, leading to artificially high electricity prices (Jano-Ito & Crawford-Brown, 2016). These challenges led to the creation of the state-owned electricity company *Comisión Federal de Electricidad* or CFE.

During the years the market share of the CFE grew gradually and in 1960, under President Adolfo López Mateos (1958-1964), production and distribution of electricity was nationalized, with CFE distributing to all parts of Mexico except for Mexico City that was distributed by a smaller state-owned company (Vietor & Sheldahl-Thomason, 2017). López Mateos was also the president who reformed the constitution in 1960 to consolidate the state's governance of the oil reserves and oil production, and was generally known as a strong supporter of the economic approach of president Cardenas (Kirkwood, 2000).

Up until the 1980s the Mexican energy sector remained relatively unchanged. Cardenas' creation of the state-owned companies, Pemex and CFE, and the consolidation of the nationalization of both electricity and oil by Lopez Mateos, both resulted in a fully nationalized Mexican energy sector and thereby also the significance and increased power of Pemex and CFE that, up until today, are two of the biggest and most powerful companies in Mexico (Vietor & Sheldahl-Thomason, 2017).

The debt crisis in the 1980s resulted in a transition in the Mexican economic policy, towards privatization and trade liberalization, yet, the energy and oil sectors remained largely nationalized: Due to the powerful labor-unions in the state-owned companies, and the constitutional requirement of nationalized subsoil resources, only smaller adjustments of privatizations were made during the 1990s and 2000s, such as the approval of the production of electricity from independent power producers that could only sell their product to the CFE. Especially the failed attempts of president Calderón of passing a comprehensive energy reform were seen as a big defeat for his administration, and he was also forced to only make smaller adjustments (Jano-Ito & Crawford Brown, 2016).

The intention to open the energy and oil sectors to private investments should also be seen in relation to a decline in both the domestic oil production and international relative prizes of oil, that in combination with an increase in domestic energy demand results in a declining exportation market affecting the Mexican economy, and furthermore, under-investments in infrastructure both within the energy and oil sectors have caused problems and inefficiency both for production and distribution (Vietor & Sheldahl-Thomason, 2017).

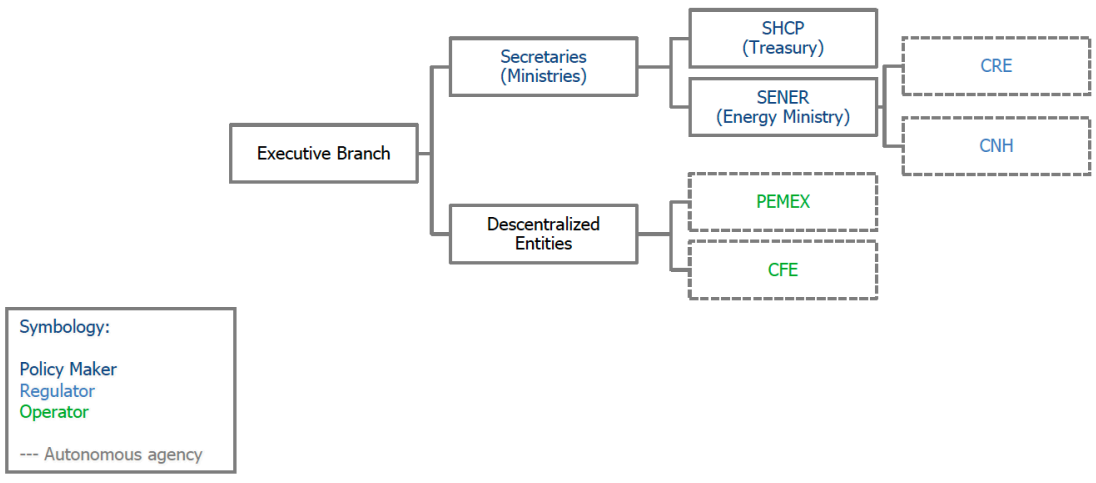


Figure 7. Institutional arrangement before the Mexican energy reform. Source: Salazar, 2014

At last, several corruption scandals within both CFE and PEMEX have also been revealed during the past three decades, as for example during the 2000 presidential elections where PEMEX was revealed to have illegally funded the PRI-candidate, and

for CFE more than 40 officials have been convicted for corruption during the past 15 years (Guerrero, 2016).

6.2.2. The Mexican energy sector today

The Mexican energy sector today, including heating, transportation and electricity, is still largely based upon fossil fuels such as oil, natural gas and coal, accounting for 90.4% of the total primary energy supply (see figure 6). Especially notable is that the energy supply from oil declined 10% from 2005-2015, and has been changed to a supply from natural gas, which grew 42.2% during the same time (IEA, 2017a). A significant amount of the supply of natural gas and coal has been imported mostly from the United States (Jano-Ito & Crawford Brown, 2016). Renewable energies accounts for 8.3% of the total primary energy supply, with a small growth of 1.8% from 2005-2015 (IEA, 2017a).

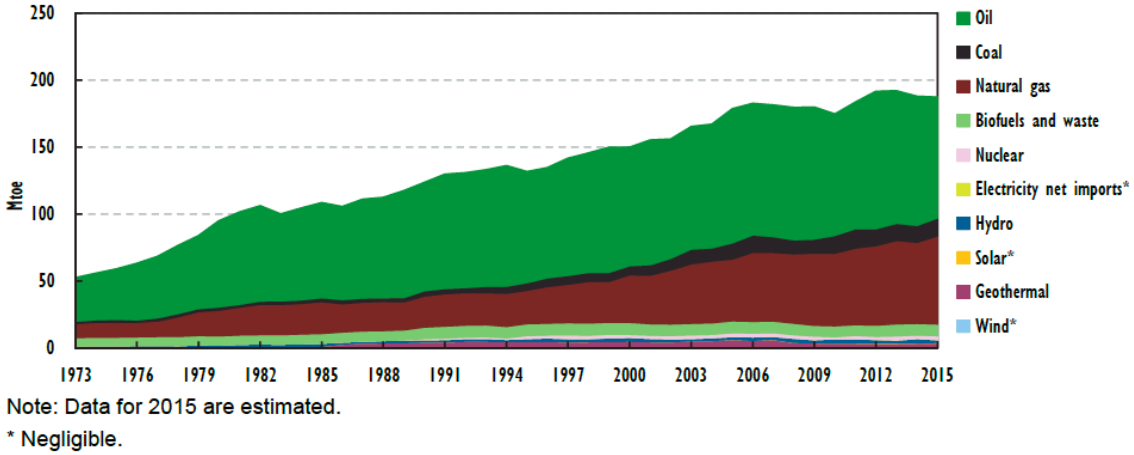
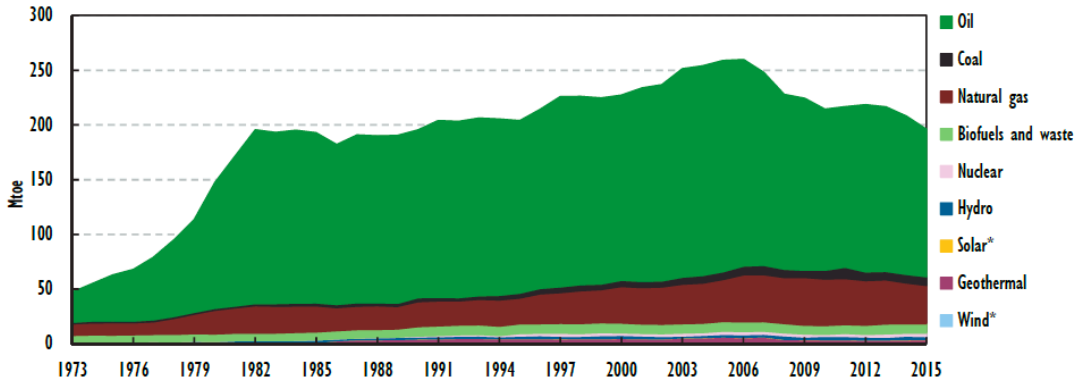


Figure 8 Total primary Energy supply 1973-2015. Source: (IEA, 2017a). (Based on IEA data from *Energy Balances of OECD Countries 2016*, © OECD/IEA 2016, www.iealorg/statistics. Licence: www.iea.org/t&c; as modified by Mads Elgaard Petersen.)

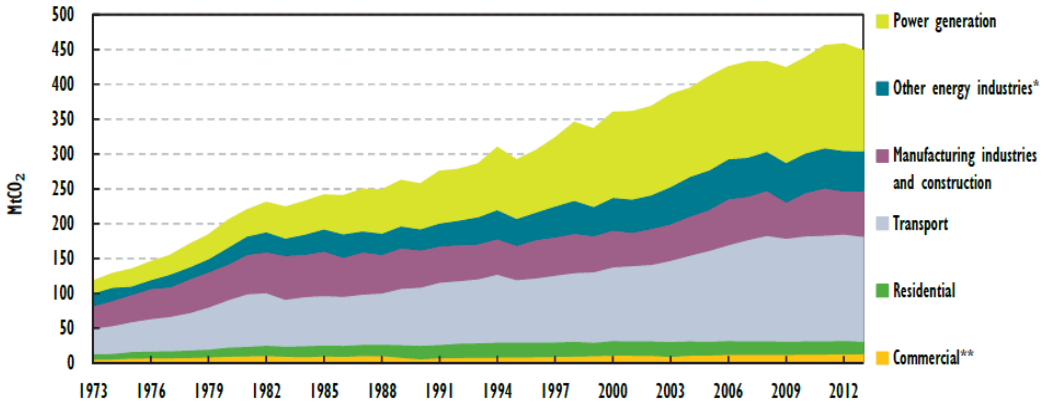
While the energy supply has grown steadily during the past decades, together with the growing domestic demand for energy, the domestic energy production has declined in the last decade (see figure 7), mainly due to falling oil-production. Together with the growing energy-demand this has resulted in a decline in the oil-exports for Mexico of 36.4% during the past decade (Ibid).



Note: Data are estimated for 2015.
* Negligible.

Figure 9 Total Mexican energy production by source 1973-2015. Source: (IEA, 2017a). (Based on IEA data from *Energy Balances of OECD Countries 2016*, © OECD/IEA 2016, www.iealorg/statistics. Licence: www.iea.org/t&c; as modified by Mads Elgaard Petersen.)

In terms of climate change, the energy-related GHG emissions has been growing steadily during the past decades, due to increased population and economic activity. Most energy-related GHG emissions derives from transportation and electricity generation (Ibid) (See figure 9).



* *Other energy industries* includes other transformations and energy own-use.
** *Commercial* includes commercial and public services, agriculture/forestry and fishing.

Figure 10. CO_2 emissions by sector, 1973-2014. Source: (IEA, 2017a). (Based on IEA data from *CO_2 Emissions from Fuel Combustion 2016*, © OECD/IEA 2016, www.iealorg/statistics. Licence: www.iea.org/t&c; as modified by Mads Elgaard Petersen.)

While the transport-sector is still largely dependent of oil-based petroleum, the electricity sector is where the increase of natural gas and renewable energies are shown the best (Ibid). In 1990, generation of electricity was largely produced from Mexican oil, but has since then changed to generate power from a more diverse portfolio of sources and mainly from natural gas today. In 2015, 60% of electricity was generated from natural gas, while generation from oil has declined significantly (Ibid). Renewable energies have also gained a larger share, especially from the generation of

hydro-power and the establishment of wind-power in Mexico that was basically non-existent only one decade ago, but now represents the second largest source of renewable electricity generation (Ibid).

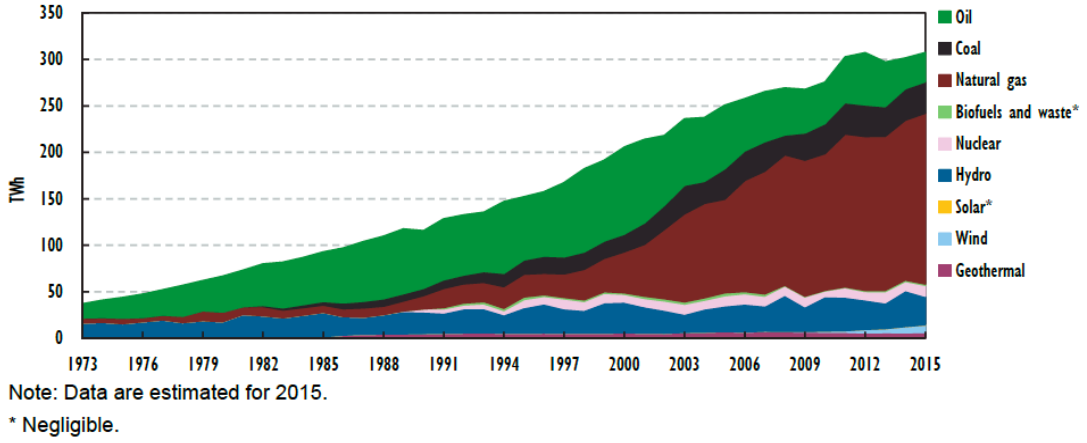


Figure 11. Electricity generation by source, Mexico, 1973-2015. Source: (IEA, 2017a). (Based on IEA data from *Energy Balances of OECD Countries 2016*, © OECD/IEA 2016, www.iealorg/statistics. Licence: www.iea.org/t&c; as modified by Mads Elgaard Petersen.)

As explained, renewable energies are an important source of reaching the Mexican climate change goals. Yet, Mexico has only recently initiated its focus on exploiting its potentials of renewables energies for electricity generation. Only hydropower has been part of the Mexican electricity generation for years, and has been developed during the years in accordance with its potential. But, Mexico also holds a big potential for electricity generation from both solar and wind, which have not been exploited fully as of yet (Ibid). For wind energy, the installed capacity reached 2.5 GW in 2015 (PRODESEN, 2016), yet according to IEA the total potential of installed capacity in Mexico could reach up to 30 GW (IEA, 2017a).

Another important source to reach the climate change goals for Mexico is energy efficiency. While the National Commission for the Efficient Use of Energy (CONUEE) was created in Mexico in 1985, a comprehensive strategy to improve energy efficiency has only recently been implemented in the Mexican energy reform, which will be explained in the following part 6.2.3. According to the IEA (Ibid), there is a large potential for improvement both in the transport and industry sector as well as for residential and commercial buildings (pp. 70-71). Despite the recent programs and strategies aimed both at the public and private sector, IEA (Ibid) assess that there is still a need for general awareness of energy efficient solutions in the Mexican society

and that additional efforts should be presented from the Mexican government in order to meet its climate change goals (p. 69).

6.2.3. The Mexican Energy Reform: future goals for the Mexican energy sector

The Mexican energy reform was implemented in 2013 and represented the biggest transformation of the Mexican energy sector since the nationalization in the 1930s (Vietor & Sheldahl-Thomason, 2017). This chapter will first present the overall strategies and goals set by the energy reform, before explaining more narrowly the goals and strategies for renewable energies, focusing mainly on wind, and energy efficiency, because of their relevance for the CCMEP program.

First of all, the reform was compromised by 10 overall principles and objectives, in order to both provide the changes and plans put forward by the development program of the Peña Nieto administration, to ensure national security and development through an overall goal of economic growth, and still be in compliance with the constitutional constraints, particularly by keeping the subsoil resources in national hands. Amendments were added to the constitutional articles, 25, 27 and 28 that secured the public ownership of subsoil resources and electricity, so that private companies were allowed to invest in the Mexican electricity, oil and gas sectors, yet under contract of the public owned enterprises (Ibid).

The objectives were (México Gobierno de la República, 2014): 1st to maintain subsoil resources on Mexican hands, 2nd to improve productivity of CFE and PEMEX by modernizing and strengthening their structure, without privatizing them. 3rd to reduce financial, geological and environmental risks for the exploration and extraction of oil and gas. 4th To keep the electricity system on national hands as well, and to make it more competitive in order to reduce prizes. 5th To contribute to the development of the country by attracting more investments in the energy sector. 6th To control a larger energy supply with lower prizes. 7th to guarantee efficiency, quality and reliability on supply, transparency and accountability on international standards. 8th to effectively fight corruption in the energy sector 9th to consolidate the administration of income

from oil and build up savings for future generation. And 10th to push forward the development of environmental protection and social responsibility (p. 3).

These objectives should then be consolidated into benefits for the Mexican people by improving economic growth by 1% from 2018 and 2% from 2025, increase production of oil and gas and strengthen oil and gas reserves, create 500,000 jobs by 2018 and 2 million from 2025 and change electricity production towards clean energy and natural gas (Ibid pp. 3-4).

On an institutional level, the reform meant several significant changes in the institutional arrangements and a dense network of different institutions was implemented in the process in order to open for private companies, separate more clearly the operational and regulatory institutions and make state-owned regulators and enterprises more independent from the political institutions (IEA, 2017a). On a ministry level, SEMARNAT was further included in the decision processes with SENER and SHCP, in order to secure environmental regulations (Ibid). As the highest government authority of the energy sector, SENER formed the domestic energy policy and was furthermore in charge of defining the requirements for the 'clean energy certificates', which were made to support clean energy producers that wanted to invest in the energy production, and to elaborate the plans of expanding the national electricity-grid. Under SENER the National Energy Efficiency Commission (CONUEE), had an important role to play, in order to set the strategies and reach the goals for energy efficiency. Furthermore, SENER, with involvement of the SCHP, was put in charge of providing a clear framework for the rules of the auctions where private companies could place a bit on different levels of the upstream production in the oil sector (Ibid).

On a regulatory level, The National Hydrocarbons Commission (CNH) and the Energy Regulatory Commission (CRE) were moved from SENER and transformed into independent regulatory agencies of the government. The CRE was put in charge of regulating contracts for power generation and interconnection, operation, transmission and distribution tariffs and the efficiency and quality of the electricity

grid, as well as supervising the rules of operation on the electricity market and verifying the rules for the clean energy certificates that were set by SENER (IEA, 2017a).

On a system level, two new independent operators were created, the National Center for Natural Gas Control (CENEGAS) and National Center for Energy Control (CENACE). The CENEGAS should manage the storage and transportation system of natural gas, while CENACE should secure fair access to the electricity-grids of transmission and distribution as well as contribute with recommendations of modernizations to the grid. Both of these duties were before under the CFE, but with the involvement of private actors, an independent operator was necessary to secure fair practices (IEA, 2017a).

At last, the reform aimed at increasing the independence of the state-owned enterprises PEMEX and CFE and changing their structure to imitate and act on level terms with private companies (Vietor & Sheldahl-Thomason, 2017). To increase competition the government opened for private investments, yet under contract of the government to still keep the ownership of the subsoil resources on public hands. In the oil sector, private companies were allowed to invest in both exploration and extraction under certain contracts of 'services', 'production-sharing' and 'profit-sharing' with the Mexican government. For the electricity sector the reform created a wholesale electricity market, where private companies were allowed to produce and sell electricity under contracts of CENACE and regulated by the framework of the CRE (Ibid).

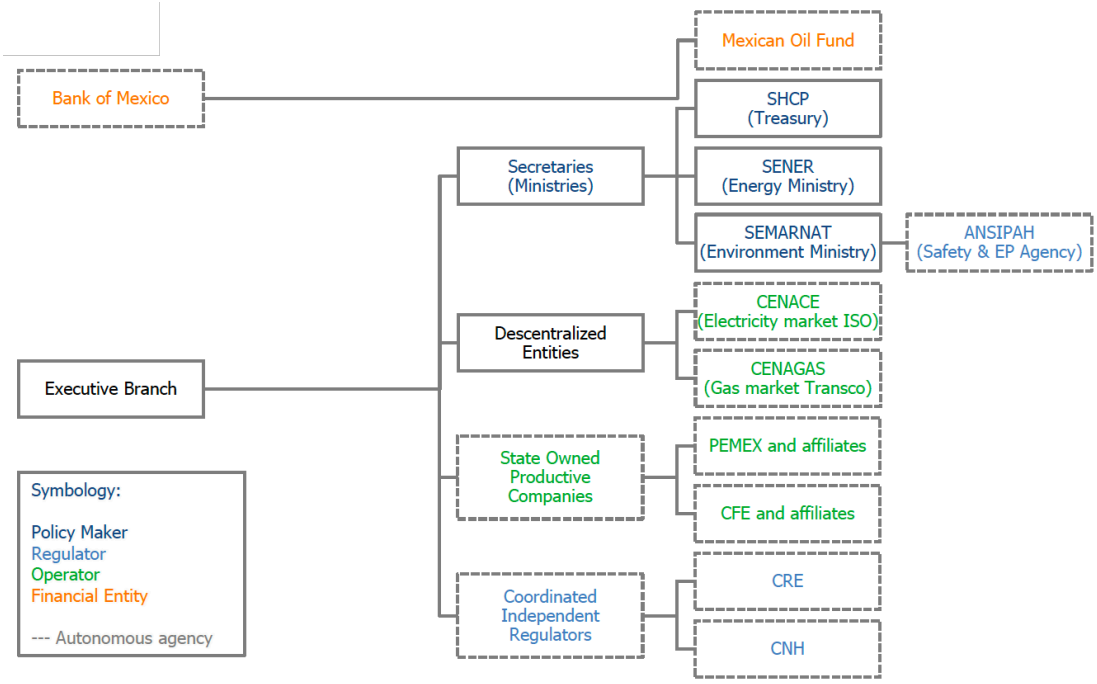


Figure 12. Institutional arrangement after the Mexican energy reform. Source: (Salazar, 2014).

Thus, for the electricity sector, the Mexican energy reform meant an opening for private companies to produce and sell electricity to the Mexican grid controlled by CENACE, this in order to lower prizes, increase capacity and reach the goal of including 35% of clean electricity from 2024 and 50% from 2050 (Ibid). In accordance with the energy reform a series of laws, strategies and programs were elaborated in order to carry out the comprehensive institutional and sectorial transformation. From the National Development Plan 2013-2018, presented by the Peña Nieto administration short after being elected into office, the government had already elaborated the Energy Sectorial Program (PROSENER) and the Special Program for the Use of Renewable Energies (PEAER) setting the goals for the time in office of the administration (México Gobierno de la República, 2014), and under the energy reform the Transition Strategy to Promote the Use of Cleaner Technologies and Fuels by SENER and the National Program for the Sustainable Use of Energy (PRONASE) by CONUEE was presented based upon the Energy Transition Law (CONUEE, 2014), Furthermore, the long-term and comprehensive National Electric System Development Program 2016-2030 (PRODESEN) was finally presented in 2015 (PRODESEN, 2016).

A large part of the renewable energy targets was set to be covered by wind energy: By 2015 the installed capacity of wind energy in Mexico was only a little more than 1.3 GW, yet in the states of Oaxaca and Tamaulipas where wind energy was most suitable, a much larger potential could be reached. It was estimated that the maximum potential could reach up to 50GW (PRODESEN, 2016). In the sectorial program the government had already put forward the goal to have installed additionally 7.6 GW by 2018 (SENER, 2013), and between 2030 it was projected to reach 12 MW, constituting the largest growth of capacity for the renewables (PROSEDEN, 2016). The majority of these investments should come the clean energy certificates where large consumers and suppliers of electricity are required to obtain part of the electricity they supply or consume from clean energy sources. Of the wind-mills already installed the largest share comes from the Spanish companies Gamesa and Acciona accounting for respectively 58% and 25%, while the Danish windmill producer, Vestas, follows on a third place with 10% or almost 406MW (AMDEE, n.d.).

Energy efficiency also plays a significant role both to reach the Mexican climate change goals and in terms of the success of the Mexican energy reform where electricity consumption should be decoupled from economic growth from 2026. In this sense, a more efficient use of energy should decrease demand in the energy sector and by that both contribute to productivity and emissions reductions (SEMARNAT & INECC, 2016), yet there is still a need for general awareness of energy efficiency in the Mexican population (IEA, 2017a). In the Transition Strategy, the government proposes to save on an average 1.9% of its energy consumption until 2030 and a total average of 2.9% between 2016 and 2050 (SENER, 2016). This goal has been put forward with the expectation of a future electrification of transport, better renovation-standards for buildings and an adoption of energy-saving systems in the industry (ibid. p. 85). For the electricity sector, efficiency steps are estimated to allow savings for 45.8% in the industry, 53.4% for residencial and 78.7% in commercial activities (Ibid. p. 87). The demand for electricity is still projected to grow, but solely because of the before-mentioned expectation of an electrification of the transport-sector. Additionally, CONUEE, the authority of energy efficiency under SENER, presented in 2014 the PRONASE that presented six objectives to enhance a more sustainable use of energies.

Among the objectives were to strengthen regulations for machinery and systems with high energy-consumption, strengthen public governance of energy efficiency, participate in the formation of a culture for energy efficiency and promote research and development (CONUEE, 2014).

It is from these objectives and benefits clear that it is not only intended to fulfill the climate change goals, but also to increase productivity, reduce prizes and strengthen the oil and gas sectors, while the potentials of other sources of energy, generally, should also be exploited, especially in terms of production of electricity,

6.3. The Danish energy sector model

The Danish energy sector has since the 1970s developed from being dependent on imports of oil to be self-sufficient and has developed a strong focus on renewable energies and energy efficiency. The Danish energy sector is governed by the Ministry of Utilities, Energy and Climate (EFKM) that is both in charge of energy, the international climate change policy. Under the EFKM the Danish Energy Agency (DEA), which is also in charge of the CCMEP program, is in charge of analysis and measuring of the energy sector as well as implementing the policies defined the ministry. Furthermore, the EFKM works closely together with other ministries, such as the Ministry for Environment and Food or the Ministry of Finance, in order to formulate its climate policies, and in 2014 the Danish Council on Climate Change was created, acting as an independent body to advise the government on the transition to a low-carbon society, which is the goal for 2050 (IEA, 2017b).

6.3.1. Background for the Danish energy sector model

The foundation of the strong Danish position on renewable energies and energy efficiency was founded in the oil-crisis in starting in 1973. At that time, the Danish energy sector was largely based on imports of oil from the Middle East, yet, the crisis forced Denmark to move away from imported oil and base its energy production on coal instead, while focus changed to the domestic extraction of oil in the North Sea, meaning that Denmark went from being a large oil-importer before the oil crisis, to be exporting oil as the only country in the EU during the 1990s and 2000s (Quartz+co, 2015).

During the 1980s, Denmark started to focus on wind-energy for electricity generation as well. At first it was planned that coal should be supplemented with nuclear power, yet building nuclear plants in Denmark met big public opposition, and by the 1985 the Danish government was forced to abandon its plans. Instead the government decided to concentrate its efforts on energy efficiency and wind energy to secure electricity supply, and planned to have installed a wind capacity of 100MW by 1990 and additionally 200MW by 2000, initially with some financing from public subsidies and grants to enhance growth in the sector. From this a strong wind-industry was founded in Denmark, mainly based on the Western peninsula of Jutland (IRENA, 2012).

By 1999, the energy sector went into a phase of liberalization that divided electricity producers and the grid-operators so that it was not possible to have ownership of both, and pricing for electricity that before had been based on fixed prices from local monopolies was changed to be based on a price-system of supply and demand. Furthermore, Denmark entered into a Nordic stock-exchange of electricity, where the electricity-supply was connected with Norway, Sweden and the Baltic countries. While the liberalization did not lead to the price-reductions it was meant to trigger, the increased competition resulted in improvements of both efficiency and productivity (Quartz+co, 2015).

During the 2000s the Danish energy policy also became close related to the Danish climate change policies. In 2007, the Ministry for Transport and Energy was restructured to become the Ministry of Utilities, Energy and Climate as it is today (Wivel, 2013), and in 2008 when the European Union decided that its member-countries should cut emissions by 20% 2020 compared to the 1990-level, the Danish government decided to add goal for additionally 20% so that Denmark should cut 40% of GHG-emissions by 2020 and that wind energy should generate 50% of the electricity generation by the same year (Quartz+co, 2015).

6.3.2. The Danish energy sector model today

Thus, the Danish energy sector today has been built upon, on one hand, and increased attention to renewable energies and energy efficiency, and on the other hand, an increasing integration of climate change politics in its energy policy. While, as mentioned in chapter 5.6, Denmark is internationally considered an entrepreneur on its climate politics, the country is also considered a world leader in terms a reliability of electricity supply, because of energy efficiency, and of integration of wind energy in its energy portfolio (IEA, 2017b).

The total primary energy supply is mainly based on oil, imported coal, natural gas, biofuels and waste and wind energy, yet, the dependency on fossil fuels is mainly due to transportation and heating (IEA, 2017b). When focusing on the electricity sector, Denmark has historically, since the oil crisis in the 1970s, been dependent on generation of electricity from coal, and since the 1980s on natural gas as well, with a growing share of wind energy and biofuels since the 1990s (see figure 13). In 2013 the share of wind energy exceeded the share of coal, making it the largest source for electricity generation, thus following this development, in 2016 wind energy accounted for 43% of the total supply, with biofuels and waste covering 18% and solar 2%, making the share of renewable energy for electricity generation 63%, while coal and natural gas accounted for 36% (Ibid).

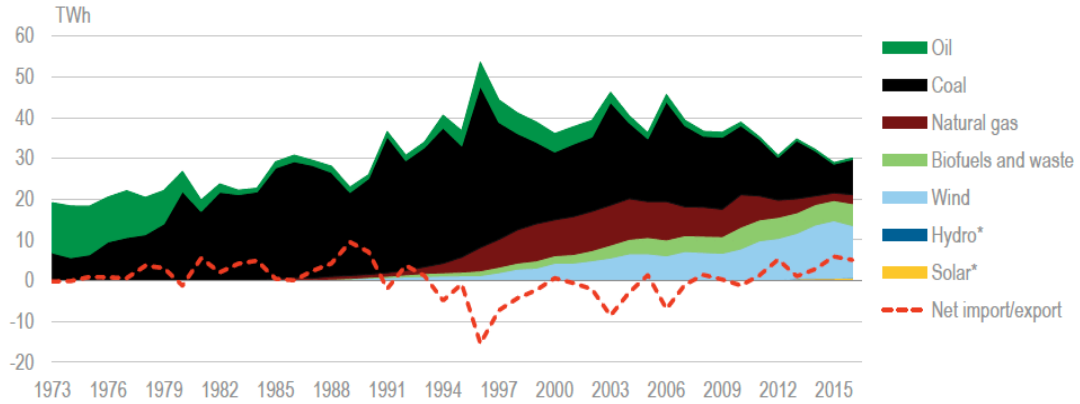


Figure 13: Electricity generation by source, 1973-2016, Denmark. Source: (IEA, 2017b). (Based on IEA data from *World Energy Balances 2017*, © OECD/IEA 2017, www.iealorg/statistics. Licence: www.iea.org/t&c; as modified by Mads Elgaard Petersen.)

Denmark has decoupled its total energy consumption and carbon emissions from GDP growth, so that from 1990 to 2015 the Danish GDP increased by 44%, while energy consumption dropped by 8% and GHG emissions by 36%, compared to 1990 (DEA, 2015). Yet, energy consumption is expected to grow in the following years, due to the establishment of large data centers in the country (IEA, 2017b).

At, last, in its energy strategy towards 2050, the Danish government presented the goal to gradually phase-out fossil fuels in production of energy, so that the Danish energy sector by 2050 would be completely independent from fossil fuels (The Danish Government, 2011). The out-phasing of fossil fuels should happen from increased energy efficiency, increased share of renewables in all the energy sector, mainly from biofuels, and a transformation in the transportation sector towards biofuels and electrification (Ibid).

6.4. The CCMEP program: The Mexican needs and the Danish contributions

A main focus for the CCMEP program has been on the Mexican energy transition and its transformation towards an increased share of renewable energies, mainly for electricity generation, and energy efficiency (Danish Energy Agency, n.d.). The program has conducted several projects concerning the sharing of knowledge and best practices within these two areas, among those were:

Assistance in the elaboration of the annual Renewable Energy Outlooks for Mexico and long-term strategies for clean energy: The DEA assisted SENER with training to use state-of-the-art modelling tools in order improve the elaboration of its long-term strategies and energy outlooks (UM, 2017c). One of the models applied was the Balmorel-model, which is known for its focus on transparency and accuracy when analyzing the electricity and combined heat and power sectors in collaboration with both public and private stakeholders. This project was highlighted in the Mexican mid-strategy as one of the actions in order to understand implications for technology in its climate policy (SEMARNAT & INECC, 2016).

Assistance of the development of a wind atlas: The DEA and the Wind Energy Dept. of the Technical University of Denmark assisted SENER in the elaboration of a wind atlas, in order to strengthen the assessment of wind energy resources in Mexico. The result was the creation of a state-of-art wind atlas database to assess wind resources for the exploitation of wind energy in Mexico (UM, 2017g).

Assistance in the preparation of technology catalogues for biomass and low-carbon transport: The DEA assisted INECC in preparing technology catalogues for low-carbon transport technologies and biomass to energy technologies, in order to ensure consistency between technical parameters as well as for emissions. This could be used in the planning of policies regarding technological change in order to fulfill the NDC's for the Paris Agreement (UM, 2017e).

Assistance in the preparation of a long-term political strategy for energy efficiency: The DEA assisted SENER and CONUEE in reviewing existing regulations and programs concerning energy efficiency and in collecting energy efficiency data in order to identify energy savings potentials in different sectors (UM, 2017b).

A collaboration with CONUEE in the holding of energy management systems seminars for the food and diary, refinery and other industries. In the case of the food and dairy industry, a pilot project was executed with five major Mexican food and diary companies in order to install energy-saving technology in their factories. The project ended up in a seminar for the rest of the industry with a presentation of the results of the project, in order to promote energy saving technologies in the rest of the industry (UM, 2017a).

6.5. Discussion

This chapter has presented the history of the Mexican energy sector leading up to the Mexican energy reform, the Mexican sector today and the goals for the Mexican energy reform of more productivity, further privatization and an increased integration of renewable energies and energy efficiency, especially in the electricity sector. Furthermore, the creation of the Danish energy sector model has been presented, as

well as the Danish strongholds on energy efficiency and wind-energy has been explained.

Through a comprehensive restructuring and an increased opening for private investments in the Mexican energy sector, the overall goals for Mexican energy reform has been to increase productivity by allowing competition in order to meet the growing demand, decrease reliability on Mexican oil by diversifying its sources of energy production and modernize the infrastructure in the Mexican energy sector. This is seen in the context of a historically nationalized Mexican energy sector, where the decreasing extraction of oil, declining productivity and infrastructure and corruption scandals has caused problems for its reliability and the growing demand for energy in the Mexican society due to economic growth. Furthermore, the Mexican energy sector compromises a large part of the Mexican GHG emissions, the energy reform therefore also represents a crucial part of the Mexican climate change strategy in order to reach the Mexican climate change goals. This should mainly be reached through an increased integration of renewable energies in the Mexican electricity sector where Mexico holds big potentials, especially for sun and wind power, and increased energy efficiency in both private and public sectors that should decouple the demand for energy from economic growth.

The argument from North (1990) that: *Institutions provide the structure for exchange that (together with the technology employed) determines the cost of transacting and the cost of transformation* (p. 34), applies well with the institutional transformation and striving for modernization in the Mexican energy through the energy reform: As for the climate change politics, the Mexican energy policy also thus also seeks to reduce transaction costs, generally by restructuring the institutional environment towards less dependency of the public-owned enterprises, as it has been done for CRE and CENACE, and the restructuring of the public-owned enterprises themselves, in order to open competition and in this new environment make them more competitive towards private investments. Since CRE and CENACE before was entities under CFE, the restructuring was necessary in order to produce clear lines for property rights to produce a competitive market. Furthermore, a competitive market should both

provide more productivity, but also contribute to modernize the Mexican energy sector, thus private investments should improve its infrastructure, making the production and distribution more efficient and reliable, and by that also reduce the costs of transacting.

For Denmark, the Danish energy model has since the oil crisis in 1973 developed towards an increasing energy efficiency and an increased share of wind- and other renewable energies, meaning that today, the largest share of electricity is produced from wind power and that total energy consumption and GHG emissions has been decoupled from economic growth. Denmark is thus seen as a world leader both in terms of integration of wind power in the electricity system and in terms of energy efficiency. With this foundation, the Danish energy strategy towards 2050 as put forward a goal to not only decrease fossil fuels in the energy sector in the future, but to have an energy sector free from fossil fuels by 2050.

Following Weyland's (2009) supply and demand driven factors for institutional arrangements, there is thus once again a demand-pull from the Mexican government in order to cope with the institutional transition in the energy reform, a part of which is concerned with energy efficiency and the exploitation of the big potentials of wind energy in the country, which on the other hand fits very well with the strongholds of the Danish energy model, which therefore compromises a supply-push. Furthermore, the opening of the Mexican energy sector for increased privatization and private investments also fits well with the increased focus for Denmark of including domestic economic interests in its approach towards developing countries, as explained in chapter 5.?. The energy reform can thus provide opportunities of investments in the Mexican energy sector for Danish companies producing solutions for renewable energies and energy efficiency. This will be explained more profoundly in chapter 7.

Focusing on the projects of the CCMEP program, once again, these are mostly concerned with assistance in modelling on measurement, concerning policy-making in terms of elaborating Mexico's overall long-term strategies and more specifically for energy efficiency, exploiting new technologies for biomass to energy use, low-carbon

transport and wind-energy through the wind atlas. Once again, the program positions itself in the process of institutional change within Mexico due to the Mexican energy sector, and seeks to lower transaction costs, by the sharing of know-how of modelling and measurements form the Danish authorities to the Mexican authorities.

Thus, for Mexico, a motivational aspect of engaging in collaboration on climate change and energy with Denmark is not only to facilitate the process of reaching its goals for climate change, but also facilitating the process towards better productivity, higher energy efficiency and a larger share of renewable energies in the Mexican energy sector, not only to reduce GHG emissions, but also to diversify its energy sources in order to decrease its reliance on domestically produced oil and natural gas. Furthermore, by receiving assistance in best-practices of modelling and measuring the energy sector, in order to clarify future potentials, can also enhance investments in the Mexican energy sector, thus, it helps to create more reliance on what exactly the potentials are for renewable energies and energy efficiency in the Mexican energy sector.

Furthermore, the seminars on energy efficiency also conducted by the program, helps to create awareness of energy efficient solutions in different industries within the Mexican private sector, which as explained in chapter …, has also been a goal put forward in the Mexican energy sector.

7. Bilateral trade between Denmark and Mexico

While trade between Denmark and Mexico do not form any explicit part of the CCMEP program, it must be considered to be relevant in order to understand motivations of engaging in the program in first place for both Mexico and, especially Denmark. On one hand, Mexico, as explained in chapter 6.2, has opened its energy sector for competition and foreign direct investments, in a scale not seen after the nationalization in the 1930s, on the other hand, as explained in chapter 5.2 Denmark has had an increased focus on economic interests in its international approach for climate change towards developing countries, and as explained in chapter 6.3 one of

Denmark's strongholds is found within its energy sector. This last chapter of the analysis will explain the approaches towards foreign trade for each country and the bilateral trade-relationship between Mexico and Denmark in order to identify motivations for the program related to foreign trade.

7.1. Mexico: Approach of international trade

As mentioned in chapter 6.2.3 one of the main elements in the Mexican energy reform was to open the energy sector for private investments and increased competition. The privatization of the Mexican energy sector can be seen in relation to a change in the Mexican approach towards its domestic economy in favor of increased privatizations and foreign trade that has been implemented gradually since the 1980s.

7.1.1. Story-line of the Mexican opening towards foreign trade

The opening of the Mexican economy towards increased privatization and foreign trade is rooted in the Latin American debt-crisis in the start of the 1980s. Before, the Mexican economy was based on a model of import substitution industrialization originated in the aftermath of the Mexican Revolution that also meant restrictive trade barriers against foreign trade, yet, the debt-crisis meant that Mexico was forced to loan funds from the International Monetary Fund (IMF) and the World Bank to stabilize its descending economy. To comply with the requirements for the loans, Mexico transformed its economy by implementing a strict fiscal policy in order to prevent inflation and initiated a reform-process of trade liberalization measures and removal of trade barriers in order to secure and enhance economic growth (Woods, 2007). Some of the most comprehensive reforms towards privatizations were of the highly subsidized agricultural sector and the nationalized telecommunications sector.

In 1986 Mexico became member of the multilateral General Agreement on Tariffs and Trade (GATT) that later evolved into the creation of the World Trade Organization (WTO), requiring Mexico to lower its maximum tariff rates significantly (Villarreal & Fergusson, 2015), yet the most decisive event up until today both for the Mexican economy and their approach towards foreign trade was when they entered into the NAFTA with Canada and the United States in 1994.

NAFTA was at the time one of the most comprehensive regional trade agreements ever made, and was the first trade agreement to tie two developed countries with a developing country. It tended to integrate and encourage free trade between the three countries by breaking down the majority of trade barriers on foreign direct investments, goods and some services and through side-agreements established a certain level of standards and collaboration concerning labor and environment (Ibid). As a result, the United States became the, by far, biggest trade partner to Mexico, and the Mexican economy became closely tied the economy of the United States, due to increased FDI from the United States to Mexico, mainly in the manufacturing sector, as well as increased imports and exports between the two countries. By 2013, 55% of the Mexican imports came from the United States while 78% of Mexico's exports went across the border to the American market (Ibid p. 20).

Mexico's high dependency on FDI and trade to and from the United States as a result of the NAFTA, has meant that Mexico actively has sought to expand its portfolio of free trade agreements with other countries and regions. Only the year after the implementation of NAFTA, Mexico began negotiations with the EU, with Denmark as a member country, in order to make a free trade agreement. While Mexico sought to decrease its dependency on the US economy, the EU sought to gain influence on the Latin American market as a reaction to the expansion of the US in the area from the NAFTA and a planned FTA with all of the Americas (Sbragia, 2010).

The negotiations between Mexico and the EU ended up in the Global Agreement, reached in 1997 and implemented in 2000. Like the NAFTA, the Global Agreement broke down a series trade barriers for FDI, goods and services, resulting in an increase of both exports to the EU but mainly imports and FDI from the EU(European Commission, n.d.). In 2016, the European Union was the second largest export market for Mexico, accounting for 5% of its total exports, yet far from the United States, representing 80% of Mexico's total exports (Secretaría de Economía, 2017a). For imports, the EU was the 3rd largest importer into Mexico, representing 11% of Mexico's total imports, after China accounting for 18% and the United States

accounting for 46% (Secretaría de Economía, 2017b). Mexico's trade deficit with the European Union accounts for a little more than -23 billion dollars).

Thus, since the debt crisis in the 1980s Mexico has opened its economy drastically towards foreign trade and foreign direct investments. As Villareal & Fergusson (2015) put it the reform-agenda *shifted Mexico from one of the world's most protected economies into one of the most open* (p. 3). In 2012 Mexico had entered into 12 free trade agreements with a total of 44 countries (Villarreal, 2012). In the National Development Plan by the current Peña Nieto administration, democracy and economic growth are 'necessary conditions for development' and for the position of Mexico as an attractive market for trade and investment in the world (Gobierno de la República, 2013). In this sense, the Peña Nieto administration links the development of the country with democracy, economic growth and foreign trade and investments. With the way Mexico has accommodated its economy, FDI is closely linked to its economic development and has had a general positive impact on productivity, job creation, increases in salaries and the overall GDP (De la Garza, 2006).

7.2. Denmark: Approach to international trade

Like Mexico, Denmark has also experienced an increasing importance of foreign trade in its economy. This is mainly due to the creation of the Single Market in the European Union and an increasingly globalized world-economy, forcing Denmark to expand its focus from trade within the European region to developing economies. As a result, a large contribution to Denmark's GDP is grounded in international trade.

7.2.1 Story-line of Denmark's approach to International trade

With the implementation of the Single Market in the European Union in 1990, trade barriers were removed between Denmark and the other member countries of the Union. Acting as one single market, this also meant that the European Union would negotiate bilateral or regional trade agreements on behalf of its member countries with parties outside of the Union.

Since the establishment of NAFTA and further expansion of FTAs of the United States in the rest of the world, the EU has also turned its focus towards regional and bilateral FTAs to maintain influence and keep competitiveness in relation to the United States and other emerging superpowers (Sbragia, 2010). As a result, the EU today accounts for several FTAs in the Americas, Northern Africa, Asia as well as with other non-member European countries. Within the Americas, apart from Mexico, the EU also established a FTA with Chile during the post-NAFTA period while ongoing negotiations with the Mercosur are being conducted. More recently FTAs has been established with the Central American countries, Colombia, Peru and most of the Caribbean (European Commission, 2017).

For Denmark, this has meant an increased importance of foreign trade in the national economy. Since the implementation of the Single Market in 1990, and especially since the further expansion of free trade agreements of the European Union with the rest of the world since the 2000s, the share of imports and most importantly exports in the Danish GDP has grown significantly: Imports grew from constituting 34% of total GDP in 1974 to 47.3% in 2014, while the exports grew from constituting 30.7% in 1974 to 53.4% in 2014 (see figure 14)

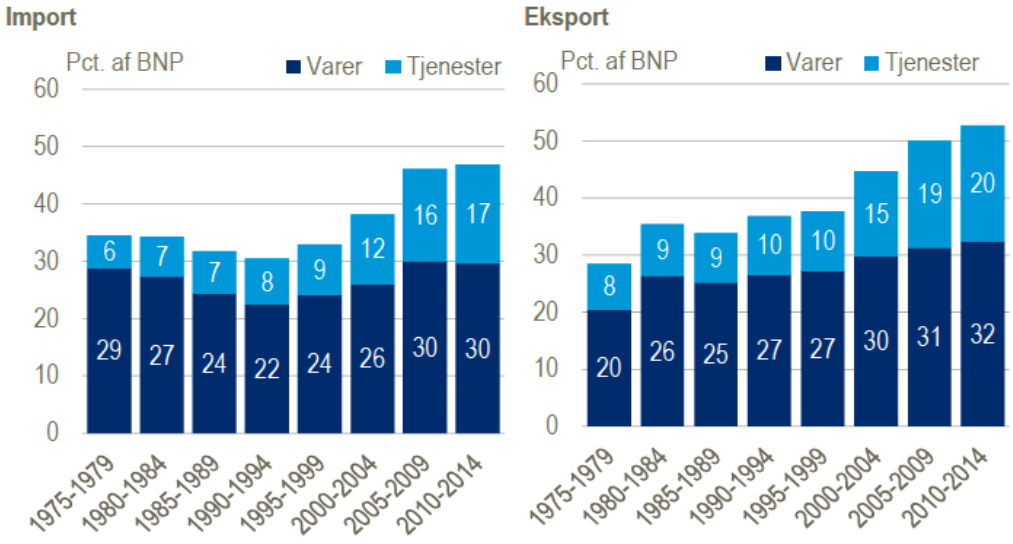


Figure 14. Imports and Exports as % of GDP, Denmark (Dark blue: Goods. Light blue: Services). Source: (Danmarks Statestik, 2015)

Compared to the Nordic countries, Denmark is the most export-oriented country and controls a more diversified portfolio of goods and services to be exported, thus, other

than clean energy technology and clean-tech in general, some of the Danish strongholds lies within areas such as: life science and medicine, tech & ICT, food technology and food production, design and its maritime industry (The Trade Council, n.d.-b). Furthermore, while the biggest trade partners for Denmark are still its neighboring countries, such as Germany and Sweden, and the United States, the exporting companies in Denmark have looked increasingly towards developing countries than countries within the European Union, thus while exports to the EU-15 countries[3] accounted for 63% in 2008 it dropped to 57% in 2012 (Norden, 2014).

This trend has also been followed by the Danish government. As mentioned in chapter 5.5.1. the climate change and development politics for the Danish government has changed increasingly towards protecting and expanding its own economic interests since the start of this decade. Thus in 2012 the Danish government released the first Growth Market Strategy directed towards middle-income countries that had experienced a significantly higher economic growth than the more stagnating European market. The publication included strategies for expanding relations with growth markets, promote exports, investments and marketing Danish strongholds as well as establish collaborations on research, innovation and education (The Danish Government, 2012).

The growth market strategy was followed in 2014 with an overall strategy of export promotion and economic diplomacy. This strategy sought to strengthen the Danish foreign service in order to contribute to domestic growth and job-creation (Regeringen, 2014). Some of the initiatives was to place growth counsellors on prioritized sectors and strengthen the commercial counselling for Danish companies through the Trade Council. The Trade Council is an organization under the Danish Ministry of Foreign Affairs, both placed domestically and some of the Danish foreign representations that promotes exports and investments by offering counselling services for Danish companies (The Trade Council, n.d.-a).

[3] EU-15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom

In 2013, The Growth Market Strategy was also followed by a specific strategy towards Mexico, highlighting the potentials for exports and investments in Mexico, due to its economic growth and recovery after the global financial crisis during 2008 and 2009 and the increased relations and collaboration between Denmark and Mexico, which had initiated with the preparations of the two COP-meetings. The strategy was built around selected sectors including: climate, energy and environmental-technologies, healthcare and welfare and food and agro (Regeringen, 2013). For climate, energy and environmental-technologies, the strategy highlighted the then forthcoming CCMEP program that should support Mexico in its low-carbon transition both by sharing Danish experiences and know-how, but also promote and draw attention to the Danish strongholds in the private sector for 'green solutions' (Ibid. p. 11).

At last, as mentioned in chapter … the energy sector in Denmark has underwent significant changes since the 1970s towards increased energy efficiency and use of renewable energies, and before in this chapter it has also been mentioned that clean-tech and clean energy technology is one of Denmark's strongholds. Following this, the Danish energy sector accounted for 11% of the country's total exports in 2015, which was the largest share within the EU. Most of exports went to other EU countries together with the United States and China, while other middle-income countries, such as Mexico, only accounted for a small share of total exports (UM et al., 2017).

In 2016 the Danish government published an export-strategy specifically for the energy sector where the efforts to promote Danish energy-exports should be further strengthened (Ibid). More than reinforcing the awareness of Danish solutions and keeping the primary position of energy exports within the EU, the strategy also sought to double the total exports of energy technology from DKK 70 billion in 2015 to more than DKK 140 billion in 2030 (Ibid. p. 11). This should be done with an increased focus counselling from the growth counsellors and commercial advisors within the Trade Council on the Danish foreign representations, increased branding through the website stateofgreen.com, which is the joint website for export promotion for the clean energy industry, financing through credit- and investment-funds and an

increased focus on government collaborations, such as the CCMEP program (Ibid). The strategy was both aimed towards the markets that already was receiving the largest share of Danish energy-exports, and on the middle-income developing markets that had taken important steps towards a clean energy transition. Thus, among other partnerships with developing countries, the CCMEP program was mentioned as one of the catalysts for growing exports of the Danish energy sector. The strategy highlighted that these partnerships in general should be conducted with closer ties to the private sector, in order to ensure that it was Danish energy solutions that were being elected (Ibid. p. 15).

7.3. International trade between Denmark and Mexico

As mentioned in chapter … the trade relations between Denmark and Mexico are covered by the Global Agreement, a FTA between Mexico and the Single Market of the European Union, in which Denmark is a member-country.

Since the implementation of the Global Agreement, trade between Denmark and Mexico has increased significantly. Thus, total trade between the two countries had between 1999-2016 grown 482%, from a total amount of 175.6 million dollars in 1999 to 847 million dollars in 2016 (Subsecretaría de Comercio Exterior, 2017). While bilateral exports have grown for both Mexico and Denmark, the latter is exporting for a significantly larger amount to Mexico than the other way around, thus in 2016, Danish exports to Mexico reached 664 million dollars, while Mexican exports to Denmark reached 183 million dollars (Ibid).

Focusing specifically on the energy sector, the Mexican participation in the Paris Agreement, in combination with its energy reform, has meant increased potentials for exports from the Danish energy sector. In this way, the Danish business organization, the Confederation of Danish Industry (DI) has estimated that Danish energy exports to Mexico could grow from DKK 0.9 billion in 2014 to between DKK 2 or 3 billion in 2030 (Jensen & Thorvilsen, 2016).

Some notable Danish clean-tech and energy efficiency companies have already established themselves in Mexico. The biggest wind-turbine producer in Denmark, Vestas has by 2017 already installed 257 windmills accounting for a capacity of 654 MW and has also during the last year been involved in two additional orders of respectively 424 and 118MW, almost doubling their capacity by 2019 (Ritzau Finans, 2017). Furthermore, also the producers of energy efficienct solutions, Danfoss and Grundfos also are also present on the Mexican market.

7.4. Discussion

This chapter has explained respectively the Mexican and Danish approach to foreign trade through their increasing economic integration in multilateral, regional and bilateral trade agreements since the end of the 1980s, as well as, the bilateral trade relations between Mexico and Denmark in these years.

First, foreign trade agreements can in itself be seen as a way to lower transaction costs for foreign trade, first of all because it provides an overall structure for rules and procedures for trade between the implemented countries and furthermore, because it breaks down trade barriers for companies that seek to trade with or invest in other countries.

For Mexico, the debt-crisis in the 1980s meant a change in its approach towards foreign trade, from being a closed economy to gradually opening up for foreign trade and investments. The entry in the NAFTA in 1994 furthermore meant a deeper economic integration with the United States that until today is, by far, the biggest trade partner to Mexico. Since then, Mexico has sought to diversify its foreign trade by entering into 11 other bilateral and regional trade agreements, one of which is with the European Union that counts Denmark as a member country. The increased economic integration with other regions and countries has meant that FDI contributes significantly to economic growth and development for Mexico. Thus, in the current administration's development plan, keeping the position of Mexico as an attracting market for foreign trade and development is in direct line with contentious economic growth and development.

For Denmark, the implementation of the European Single Market in 1990 has been an important factor for trade relations between Denmark and Mexico. As a reaction on the NAFTA, the EU decided to start negotiations with Mexico, leading to the Global Agreement, implemented in 2000. The EU has since then entered into several other bilateral and regional FTAs, resulting in an increased importance of foreign trade in the national economy of Denmark. In consequence, exports accounts for more than half of the Danish GDP today. This has also meant an increased focus from Denmark on integrating domestic economic interests in its development policies, especially towards middle-income growth-markets, such as Mexico. This also involves Danish companies within the Danish energy sector, which constitutes an important part of the Danish economy. Therefore, the CCMEP program is also mentioned as a catalyst for Danish exports and foreign investments in Mexico, both in the Growth Market Strategy to Mexico and in the export strategy for the energy sector, further supported by the DI's projection that energy exports will increase significantly until 2030 due to the Mexican energy reform and participation in the Paris Agreement.

The most important motivational aspect for Denmark to engage with Mexico in the CCMEP program must therefore be to promote foreign trade and investments to Mexico from companies in the Danish energy sector and by that, enhance economic growth domestically, reducing economic uncertainties in an increasingly more competitive and globalized world, due to increased international economic integration. The CCMEP program can be seen as a platform to promote Danish renewable and energy efficiency solution, and thereby, Danish companies providing those solutions. Furthermore, the CCMEP program assists to develop the Mexican energy sector, generally by best-practices of modelling and measurements, which can further enhance the demand for exports and FDI to the Mexican energy sector in general.

There is also a motivational aspect to this for Mexico. The reason for the privatization of Mexican energy sector was to increase productivity and infrastructure and decrease its dependency on oil and natural gas, for example by exploiting the big potentials for

renewable energies, including wind-energy, in the country and improving energy efficiency in all sectors. Thus, attracting Danish investments on the areas where Denmark has its strongholds, can facilitate improvements on these goals. Thus, once again, Mexico is providing a demand-pull while Denmark is providing a supply-push, while facilitated by the different projects of the CCMEP program

8. Conclusion

This thesis has conducted a comparative case study of the climate change, energy and foreign trade policies of Mexico and Denmark in order to identify political and economic motivations for both countries to engage in a collaboration on climate change mitigation and energy transformation, executed through the Danish-Mexican Climate Change Mitigation and Energy Program since 2014. This has been carried out with a theoretical basis in the New Institutional Economics and its focus on institutions and transaction costs combined with the supply- and demand-driven factors for foreign institutional frameworks.

For Mexico, the CCMEP program, provides Danish best-practices and know-how of measuring and modelling the policies and performances both of climate change mitigation and within its energy sector, this, in order to support its comprehensive restructuring of institutional and sectorial frameworks as a consequence of Mexico's LGCC implemented in 2012 and energy reform implemented in 2014. Both the LGCC and the energy reform can be seen as an attempt by the Mexican government to lower transactions costs. The LGCC can thus be seen as a reaction to the significant uncertainties climate change imposes on the Mexican economy and a crucial part of the ENCC 10-20-40 is to ensure green growth. The Mexican energy reform is an attempt to transform the Mexican energy sector into a more competitive and productive part of the Mexican society, and furthermore plays an important part of reaching the Mexican climate change goals by increasing the share of renewable energies for electricity generation and improving energy efficiency in the Mexican society.

The primary motivations for Mexico to engage in the CCMEP program can therefore be found herein. Denmark is a world leader for green growth, for integrating renewable energies, primarily wind energy, and for enhancing energy efficiency. Thus, assistance from Denmark in sharing know-how and best-practices facilitates parts of the processes for Mexico to reach its goals both in terms of climate change mitigation and in terms of its energy reform. As a secondary motivation, the partly privatization of the Mexican energy sector, combined with the focus on wind energy and energy efficiency, creates a demand for FDI for both of these areas, a demand that can be filled out by the Danish companies that represent a stronghold on these areas.

For Denmark, the CCMEP program can be seen in relation to a long tradition of an activist approach towards international climate change politics and towards its development strategies for developing countries in which climate change mitigation is normally applied. In recent years, this approach has been increasingly supplemented by strategies to promote domestic economic interests, including government collaborations and export-promotion. This can be seen in relation to the increasing importance of exports in the Danish economy and increased international competition due to globalization.

Therefore, the motivational aspect from Denmark's point of view resides mostly in preserving domestic economic interests by facilitating investment- and export-opportunities through the CCMEP program. The CCMEP program can thus help to draw attention to Danish products and solutions for wind energy and energy efficiency, and thereby help to enhance economic growth and job-creation in Denmark as-well. For this, Mexico represents a good match: Increased opening for FDI and trade has been going on since the 80s, but has only recently started within the energy sector, the two countries are already covered by a FTA and because of the LGCC and the Mexican energy reform, a demand has been created for wind energy and energy efficient solutions. A close government collaboration, can in consequence help to draw attention to specifically the Danish solutions.

At last, the increasing multilateral integration of climate change politics has also

helped to facilitate the process. Both Denmark and Mexico are seen as leaders for respectively developed and developing countries in terms of climate change politics, and both are supporting comprehensive and long-term multilateral agreements on the issue. As a result, they have both been hosting a COP meeting each in 2009 and 2010. It was in between these two COP-meeting that collaboration between Denmark and Mexico started in the first place. Thus, a similar approach to multilateral climate change politics and a leading role for both countries on this platform has drawn the two countries together in order to collaborate on climate change.

To sum up, it has been within a combination of the approaches of Denmark and Mexico towards climate change, energy and trade politics that in the end has led to the implementation of the CCMEP program, due to a shared motivation on the multilateral scene, yet, with different motivational aspects domestically, mainly because of the differences between the two countries' economic and geographical positions.

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