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Questioning energy transition in a decentralized Moroccan context : study case : the city of Oujda in the Oriental Region, Morocco

Cécile Gillot

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Questioning energy transition in a decentralized Moroccan context

Study case : the city of Oujda in the Oriental
Region, Morocco

Cécile Gillot

YEAR 2020-2021

MASTER INTERNATIONAL DEVELOPMENT STUDIES

THESIS SUPERVISOR: PASCALE TROMPETTE

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List of abbreviations

ADEME : Agence De l'Environnement et de la Maitrise Energétique

ADEREE : Agence Nationale pour le Développement des Energies Renouvelables et de l'Efficacité Energétique

AMEE : Agence Marocaine pour l'Efficacité Energétique

CIEC : Cellule Info Energie Climat

COP: Conference of the Parties

EE: Energy Efficiency

GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit

GHGE: Greenhouse Gas Emissions

HAF: High Atlas Foundation

IDE-E: Institute for Development, Environment and Energy

IFMERE : Institut de Formations aux Métiers des Energies Renouvelables et de l'Efficacité Energétique

MASEN: Moroccan Agency for Sustainable Energy

ONEE: Office National de l'Electricité et de l'Eau potable

PAED: Plan d'Action pour l'Energie Durable

PCD-ED : Programme de Coopération Décentralisée pour les Energies Durables

RE: Renewable Energy

1. Introduction

Since about ten years, local energy transition in Morocco has been developing through two simultaneous strategies: the national energy strategy and the strategy of “regionalization”. On the one hand, in 2009 Morocco adopted a roadmap towards a low-carbon energy system which set five priorities: developing a diversified energy mix, mobilizing domestic resources and among them renewable energy, prioritizing energy efficiency, strengthening regional cooperation with European and African markets and promoting green technology through local industrial integration. This strategy came as an answer to the critical dependency of the Moroccan state on energy imports from fossil sources, reaching 94,5% in 2015 (International Energy Agency, 2019). This same year, Prince Moulay Rachid announced Morocco’s ambition to increase the national renewable energy generation from the 42% targeted in the 2009 strategy, to 52% of the country’s installed electricity production system by 2030 (Cantoni and Rignall, 2019). Morocco’s ambition in the development of clean energy technologies and its increasing presence in the global arena, in particular during COP22 held in Marrakech, positioned Morocco as a leader and an advocate of the African continent on the energy transition (International Energy Agency, 2019).

On the other hand, in 2011 Morocco launched a global constitutional reform called the “advanced regionalization”. It consisted in a process of decentralization, a transfer of responsibilities in the management of public services, among which services related to energy. This implied a legal recognition of the various local levels and their competencies (ADEREE, GIZ and IDE-E, 2012). This process was reinforced by another constitutional reform in 2015, through which local authorities’ competencies were clarified and civil society included as a full member of local decision-making (Jafari and El Moujaddidi, 2016).

Yet, although the decentralization process was on track, Morocco’s energy transition strategy has been largely criticized by different authors and international agencies for its centralized orientation. Cantoni and Rignall (2019) identified its main characteristics as being “technopolitics” and megaprojects. Based on her empirical study about Moroccan energy objectives, Steinbacher (2015) also highlights that the type of energy transition chosen is one where decisions are taken “always top-down”. She concludes that decentralizing electricity generation is, at best, understood as a small number of large plants over the territory and does

not constitute a current objective of the Moroccan energy transition. I shall as well mention Gerin-Jean (2018) who states that there is no energy transition from the bottom in Morocco.

All those authors, however, based their conclusions from an observation of centralized energy production projects, mainly those related to the huge solar power plant Noor in the region of Ouarzazate. In other words, authors noted a lack of local stakeholders' involvement when looking at national orientations rather than analyzing the local initiatives themselves. As mentioned by the 2012 report of ADEREE, GIZ and IDE-E, the energy transition must be analyzed through three categories: centralized energy production, decentralized energy production and energy efficiency. One's analysis about local stakeholders' implication in the energy transition should not be limited to the first dimension only. Eric Verdeil appears to make the exception by actually observing various city levels in "emerging countries", including Jordania (2011), Tunisia (Bolzon, Rocher and Verdeil, 2013), Argentina, India, Turkey and South Africa (Jaglin and Verdeil, 2017). He, as well, states that possibilities for action from local stakeholders are very limited and that he does not observe an increase in local stakeholder's power in the energy transition of emerging countries. But Moroccan cities did not constitute one of his fields of study.

What drew my attention in the first place was the lack of scientific literature about local stakeholder's involvement and decentralization in the energy transition in the Global South and especially in Morocco, as well noted by Guerin-Jean (2018) and Zalengera et al. (2020). The latest calls for deepening the research about energy governance and favorable circumstances for the functioning of multi-scale governance arrangements in the domain (Zalengera, 2020). About Morocco, the only reference available is actually the report from ADEREE, GIZ and IDE-E dating back 2012. This topic will later on be defined as "taboo"¹ during an interview with a former worker at the Germanwatch.

Thus, when I arrived on the field, I inevitably came to confront the existing analyses of other emerging countries, plus the lack of datas available in Morocco, to our case study: the city of Oujda. It came as a surprise when I discovered quite a dynamic context for the energy transition at the local level. This seemed even more paradoxical considering that Oujda is located in a marginalized region of the north-east Morocco: the Oriental region. Although this region is the second largest of the country in terms of surface (82 820 km²), it is characterized by quite weak social indicators (Plan d'action en faveur de l'énergie durable, 2015). The

¹ Germanwatch, phone call, 16/08/2021

unemployment rate in urban areas is one of the highest in Morocco, reaching 19,9% in 2014, especially among young people (Jafari and El Moujaddidi, 2016). A short field observation in Morocco was enough to reveal that the region still suffers from a negative image of “less developed” region, far from the dynamic core of the country on the western coast.

Trying to understand the specificities of Oujda’s territory in terms of energy transition, I therefore came to wonder **whether the Moroccan decentralization process allows for local stakeholders to contribute to the *energy transition*.**

The decentralization process refers, as mentioned above, to the transfer of powers and responsibilities from the central government to the peripheries, the local authorities (Jafari and El Moujaddidi, 2016). The analysis will therefore be based on local authorities, and to a certain extent, on local societies collaborating with them. More specifically, the study case is focused on the municipality of Oujda.

Our main question will inevitably lead to two types of interrogations. The first one implies to cease the type of favorable factors that actually empower local stakeholders to act on the energy transition. Those factors will reveal to which extent decentralization is the provider for local capacities, as well as the kind of actions local stakeholders are able to implement. Adopting this standpoint of analysis from local capacities rather than from limits or failures is not trivial in this work. Rocher and Verdeil (2019) interestingly note that many studies about energy transition in the Global South are dominated by Eurocentric approaches only picturing underexploited potentials. Using a local approach is a way to depict the large spectrum of energy transition paths that depend on multi-level contexts, to value initiatives even if marginal, and to grasp true local reluctances when there are.

The second interrogation is more implicit and invites us to question the meaning of the energy transition itself. Thereby, I want to reflect on what energy transition means and if there is a specific local model for this transition. The idea is to reflect on the margin of local stakeholders, not only over action in the energy transition, but as well over thoughts and visions. The decentralization would not allow a deep contribution of local stakeholders to the energy transition if they are not able to identify themselves to it. Starting from those questions, I propose the two following hypothesis:

- H1: The decentralization process offers a narrow basis for local action in the energy transition, but the actual contribution of local stakeholders depends on other factors.

This first hypothesis starts from the assumption that decentralization may provide local empowerment for achieving energy transition. Decentralized energy is identified by several authors as a potential way to empower citizens and to achieve energy transition (International Energy Agency, 2019; Cantoni and Rignall, 2019; Aoui, Moulay. and Rignall, 2020). Few detailed exploration actually studied the benefits of decentralization for the energy sector but researches of Batchelor and Smith (2014) and Brown et al. (2015) suggest that decentralization could bring greater democratization, improved access to energy and improved efficiency as well as resilience and affordability. Vandana Shiva herself, states that the key to energy transition relies in strategies of re-localization: the establishment of decentralized energy systems based on grassroots democracy, local economies, ecological integrity and the preservation of soils (Escobar, 2015). Besides, studies about decentralization usually agree that the municipality level is the most adapted and accurate for citizens' participation (Rapport préliminaire. ADEREE, GIZ et IDE-E, 2012).

However, I expect that local stakeholders' involvement in the energy transition in Oujda cannot be explained only by decentralization, firstly because the process is still perceived as recent and limited, and secondly because it is uneven over the Moroccan territory (Jafari and El Moujaddidi, 2016). Analyzing this hypothesis will reveal to which extent the framework of decentralization is responsible for local appropriation and which other factors can be found in the local context of Oujda. Besides, authors such as Kumar, Pols and Höffken (2021) warn that even when decentralization is aimed, it does not necessarily lead to an energy transition in terms of climate and development challenges. This assumption leads us to our second hypothesis.

- H2: The urban and institutionalized context, proper to decentralization, leads to produce visions of the energy transition based on a neoliberal pattern.

Through this hypothesis, I want to analyze what meaning is given to the energy transition at the local level of Oujda. Highlighting this question comes as a necessity for two reasons. First, it appears that most literature (grey and scientific) often does not bother to provide a definition of this term, as if energy transition was both obvious and neutral. Second, through investing local definitions, I want to grasp if local margins and specificities allowed for the

development of an alternative vision of transition, based on social grounds rather than the simple shift from one energy state to another.

I assume that the perception of transition driven by decentralization will be imbued with neoliberal characteristics because of its much institutionalized framework. As mentioned by both Gerin-Jean (2018) and Jafari and El Moujaddidi (2016), regional policies in Morocco spread notions of competition and competitiveness. The decentralization process itself responds to requirements from international banks and development agencies at the core of neoliberal thinking. Ceasing a “vision” would certainly require a very large inquiry and collecting of data from many stakeholders. Rather than ambitioning to give an actual answer, I propose to initiate an observation, a discussion, and a reflection, on the characteristics of local visions of energy transitions, and on the term “transition” itself.

The two hypotheses apply to the analysis of the specific context of Oujda and are not necessarily meant to be generalized to other Moroccan cities. The argument is based on the assumption that transitions are plural and reliant on local contexts. The thesis can however provide a framework for analysis and a certain quantity of data about Moroccan local stakeholders and energy transition. The core of this work will be dedicated to an analysis of the local level but I will summarize briefly the national context related to energy and energy transition as to keep in mind the larger field of research that inevitably affects the local level.

(i) The first part of the argument will be dedicated to analyzing the grounds for action provided by the decentralization process through a review of laws, competencies and actual implementation at the local level. They will be confronted to qualitative data providing complementary explanations for local action. (ii) The second part will try to figure out the model of energy transition applied by local stakeholders through the observation of the type of actions implemented and the discourses expressed in grey literature and interviews.

2. Research framework and methodology

2.1 Concepts and framework of analysis

Analyzing the decentralization process necessarily implies to look at public policies and their management at the local level. This work will therefore be based on several types of sources. First of all, it is necessary to start from literature about decentralization, especially related to the Moroccan case, and from the legal basis providing local competencies. As explained by Badri (2019) free administration implies the existence of general and effective awarding, as well as the means to exercise them. According to Jacques Baguenard, decentralization can be measured with three conditions which are: the existence of specific competencies for local authorities, proper activities realized by local authorities independently from central power and autonomous management of local affairs despite possible financial difficulties (Badri, 2019).

Zalengera et al. (2020) provide more sophisticated tools in order to measure decentralization. First, based on the works of Gregersen et al. (2004) and Cabral (2011), they distinguish three stages of decentralization applied to the energy sector: deconcentration, delegation and devolution. The most developed form, devolution, is characterized by a transfer of power to sub-national authorities accountable to/for local people. Applied to the energy sector, devolution can be demonstrated by effective decision-making control of sub-national levels over the local energy sector, for example planning of the local electricity network or maintaining local street lighting (Zalengera et al., 2020). Second, they identified seven factors for “successful” decentralized energy governance in Sub-Saharan Africa as listed below:

- the type of decentralization (devolution as mentioned above)
- the existence of a range of roles that local authorities can play and their ability to understand them
- sufficient power and resources to match with responsibilities
- effective multi-level coordination in terms of resources, commitment and competences
- Interrelationships between stakeholders acting from different levels, in terms of political and economic understanding
- Facilitation of local stakeholder networks implying to engage communities

- The existence of pre-requisites in terms of energy proficiency in order to allow for local capacity to develop through community awareness raising and trainings

Those factors are not only rooted in the decentralization itself. Some are rather complementary factors which make decentralization more efficient for the development of decentralized energy. Confronting them with the Moroccan case may help both to define decentralization and other factors for local stakeholders' contribution to the energy transition.

Therefore we shall look at the current law related to decentralization at the municipality level, which is the organic law n°113-14 of the 7th of July 2015. An identification of local actions in Oujda will be made according to competencies and will be confronted to the factors defined in other contexts. This will be partly based on the 2012 report of ADEREE, GIZ and IDE-E about local stakeholders' margin of power in the energy domain.

Second, I based my hypothesis and my interrogations according to similar studies carried out in different countries or at the national level in Morocco. Taking them into account brought me to wonder if foreign observations could also apply to Morocco. Confronting those assumptions will contribute to reveal the extent of local action. They are summarized as followed:

- Moroccan energy transition is always top-down and RE remain in the hands of the state (Steinbacher, 2015)
- There is no increase in local stakeholders' power in the energy transition of emergent countries (Jaglin and Verdeil, 2017).
- Possibilities for action from local stakeholders are limited to (Verdeil, 2011):
 - Few financial means and no competencies over the electricity sector
 - Dependence on the national and international levels as well as private sector
 - Actions limited to local heritage and awareness campaigns focusing on economic advantages rather than on behaviors
- Priorities are oriented towards reducing dependence on energy imports, decreasing the cost of electricity and socio-economic goals (Far, 2019; Steinbacher 2015)
- The current Moroccan law facilitates large-scale projects rather than encouraging community-based and bottom-up energy initiatives (Choukri, Naddami and Hayani, 2017)

For the second part of this thesis, we will use development studies as a framework to reveal visions behind local public actions and stakeholders' discourses. This is a way to

question the margin of power of local stakeholders in terms of emergence of their own vision of the energy transition. Following our second hypothesis, I will especially rely on Sheppard's work and Guerin-Jean's analysis of Moroccan public action for the identification of neoliberal characteristics.

2.2 Methodology

This research is based on the analysis of both primary and secondary sources. The first step consisted in capitalizing scientific references on energy transitions in the global south and in Morocco. Facing the lack of sources available about Morocco, many references were finally taken from grey literature.

My position as an international volunteer for the decentralized cooperation between the city of Lille and the municipality of Oujda offered me the opportunity to explore the field of research at the forefront. As my work consisted in managing sustainable energy projects between the two cities, I was able to access easily both local data on local planning in this field and the most relevant stakeholders in charge. I therefore followed a qualitative approach in order to produce primary sources. I could evolve within the field in a sort of participative observation, as I was myself, one of the stakeholders involved. I was able to carry out a few semi-directive interviews which implied the preparation of interview grids upstream, and systematic transcriptions downstream. They aimed at collecting local stakeholders' vision of the national and local energy transition as well as the perception of their own involvement in the domain. Although the choice of my research was first based on my position, the standpoint of the analysis was developed through an inductive approach, according to the stakes identified and the available data in literature and on the field. I started from a specific case and observable data in order to interpret them with greater theories.

However, if my position first appeared as an opportunity, it finally became my main difficulty for several reasons. Unfortunately, my field research was much shorter than I had imagined. Due to the current sanitary crisis of Covid19, my departure to Morocco was delayed by 2 months. By the time I could arrive, get acquainted with the field and actually meet local stakeholders, it only left me a few weeks to carry out my interviews during the month of august. Besides, if my position allowed me an easy access to some institutional stakeholders, it limited my access to others. As I was wearing both the cap of agent for the city of Lille and the cap of researcher, I could not risk meeting with stakeholders like the GIZ

with whom Morocco engaged into a diplomatic crisis and froze all activities. I also was seen as the agent in the first place, a position that did not allow me to ask for certain information at the regional and national levels. In the end, I conducted semi-directive interviews with the following five stakeholders:

- An employee at the department of planning and sustainable development of the municipality of Oujda
- A member of the local society Yes Green Maroc based in Oujda
- A former employee of the Germanwatch
- An employee of ONEE based in Taza (city located in the Oriental region) but originated from Oujda
- A program manager at the Moroccan Agency for Energy Efficiency

As mentioned before, this research is an exploratory approach providing first hand local data that would deserve to be further developed. For what's left, one will probably notice the use of the first person as a pronoun for the researcher to express her reflection. This voluntary bias is used as an attempt to deconstruct the figure of the neutral researcher and to re-position it within its full individuality, which is not independent from the research chosen and analyzed. "I" is therefore used to identify the researcher and "we" to involve the reader in the reflection.

2.3 Field of research: the evolution of the Moroccan centralized strategy

This research was carried out at the local level of Oujda in the Oriental region, but is part of a larger national context in which the transition to renewable energy has become an important topic, especially over this last decade. Although we are more interested in what is happening at the local level, it remains necessary to present a short overview of the issue at the Moroccan scale. This summary will help us to picture the larger landscape of the national strategy pointed out by many as very centralized.

As mentioned by Gerin-Jean (2018), one should pay attention to historical trajectories proper to each country in order to avoid shortcuts, especially those demonstrating a so-called inadaptability of northern concepts to homogenized "Arabic countries". The goal of this work is not to denounce but rather to contextualize. Since its beginnings under the French protectorate, electricity in Morocco was very much linked to the economic history of the

country and was produced according to a centralized mode (Gerin-Jean, 2018). After the independence, and contrary to the other Maghreb countries, Morocco implemented an interventionist strategy in order to stimulate direct foreign investments. In 1962, the ONE obtains a monopoly over electricity production which will last for 20 years of full public production (Gerin-Jean, 2018).

With the structural plans as a background, the power sector progressively entered into a liberalized system, the development of renewables being the first area where liberalization was taking place (International Energy Agency, 2019). In 1994 was adopted Act 13-09 on renewable energy which constituted a first step towards the liberalization of the Moroccan energy market (hence the abolition of the rights of monopolies). It allowed private companies to produce electricity from renewable sources and to buy it from the market (Choukri, Naddami and Hayani, 2017). In other words, private green developers can produce electricity on behalf of a consumer or a consortium of consumers having access to very high voltage or high voltage, and in some specific cases to medium voltage networks (International Energy Agency, 2019).

As mentioned above, in 2009 Morocco adopted a National Energy Strategy and later announced its ambition to increase the national RE generation from 42% to 52% of the country's installed electricity production system by 2030 (Cantoni and Rignall, 2019). The distribution of renewable energy is planned with 12% of hydro, 20% of solar and 20% of wind generation. This strategy came as an answer to the current energy situation of the country.

Morocco relies mainly on coal, oil and gas for power generation (Cuyler, 2016). Reaching 94,5% in 2015, the Moroccan energy profile is characterized by a high dependence on energy imports, especially on fossil fuels. Petroleum accounts for 41% of the primary energy supply, crude oil for 31%, coal and peat for 17% and gas for 4% (Choukri, Naddami and Hayani, 2017). Due to economic growth, the rise in population and investments in electrification projects (99,5% electricity access rate in 2015), energy consumption considerably increased during the last decades with an annual rate of 6,5% from 2002 to 2015. If electricity demand were to follow its current tendency, it might quadruple by 2050 (Far, 2019). CO₂ emissions have also increased by 80% since 2000 (Cantoni and Rignall, 2019) and generalized access to electricity may double CO₂ emission per inhabitant during the next 15 years.

Following this national strategy, the country launched the “integrated” Moroccan Solar Plan (MSP) which implied major economic and governance implications among which new laws and institutional reforms like the creation of MASEN (Cantoni and Rignall, 2019). It aims at installing 2000 MW solar power capacity by 2020 and 4800 MW by 2030 (Choukri, Naddami and Hayani, 2017), especially through the implementation of several solar stations distributed over the territory. With an annual sunshine of 3000 h, equivalent to an irradiation density of almost 5.3 KWh/m² per day, Morocco is well suited for investing in solar energy and the choice has been made to bet on large-scale solar energy power (Choukri, Naddami and Hayani, 2017). Since the adoption of those plans, many large-scale projects and programs are operational or to be commissioned (Noor Ouarzazate Complex, Noor Laayoune, Boujdour, Noor Tafilalet, Noor PV II) for a total capacity superior to 800 MW at the horizon 2020 (International Energy Agency, 2019).

In 2010, Law 13:09 related to renewable energy introduced three different regimes for RE projects according to their size. It allowed private developers to produce electricity on behalf of a consumer or a consortium of consumers for very high voltage (VHV), high voltage (HV) and under certain circumstances to medium voltage. In 2011 was adopted law 47-07 on energy efficiency, introducing energy performance requirements and thermal regulations for buildings, equipment and appliances, an energy impact assessment in case of construction, compulsory energy audits in residential and commercial buildings, transport and industry. In 2015 was adopted the decree 2-15-772 which set out the rules for progressive opening of the medium voltage network (International Energy Agency, 2019). In 2016, Act 58-15 allows the trade of surplus green generation to ONEE and gives the right for large consumers to develop bigger capacities. It introduces the basis for the low-voltage electricity market although the decree for RE connection to low-voltage energy has not been approved yet. Although the energy sector is increasingly liberalized, ONEE remains the sole buyer and the main player at the moment (International Energy Agency, 2019).

In 2021, the Moroccan special commission for development published its report on the new development model of Morocco, in which the energy transition is identified as one of the pillars for development. The official objective of developing sustainable energy is to boost attractiveness and impulse competitive shocks. It is interesting to note that this focus on energy is part of axis four related to “resilient territories, anchorage spaces for development”. In other words, the energy strategy is expressed in relation to territories rather than in the axis

dedicated to economy. Its content especially highlights the necessity to restructure the ONEE and to leave space for re-localizing electricity distribution at regional and city levels and for developing decentralized production (Commission Spéciale sur le Modèle de Développement, 2021).

Therefore, looking at the sole evolution of the Moroccan electricity system, we can note a coherent pattern of centralized management and generation which has been liberalizing increasingly. Observing this general landscape from the top indeed pictures national stakeholders as motors of this strategy, including several ministries, MASEN as a limited company with public shareholders in charge of promoting all renewable energies, and the AMEE in charge of energy efficiency. Over the years, electricity was closely related to discourses on the country's development, in economic terms mainly, but as well in terms of territoriality and decentralization more recently. I will further propose an observation from the bottom, where the landscape is perceived through local stakeholders.

3. Local contribution to the energy transition: characterization of decentralized roles, limits and other favorable factors

3.1 Legal basis and national strategy for territorializing energy transition

The identification of opportunities and limits of the decentralization process is first based on the legal framework and especially on transfers of competencies which indicate if an actual devolution is at work. As explained by Badri (2019) the clarification of competencies is a recurring concern. The report of ADEREE, GIZ and IDE-E (2012) on local stakeholders' margins of power already identifies a range of them but, considering that they date back 2012, we must update and complement them with more recent data.

According to the organic law 113-14 related to municipal authorities and adopted on the 7th of July 2015, municipalities benefit from a moral personality and a financial and administrative autonomy. They are expected to manage local affairs and to meet with the needs of the population through “proximity” competencies, including the distribution of drinkable water and electricity, the management of urban public transports, public lightning, treatment and valorization of waste, urban planning and urbanism and international cooperation with other municipalities (Organic Law 113-14, Art. 83-91). Those are defined by the law as “owned competencies”, to be distinguished with “shared competencies” with other local authorities (such as local economic development) and with “transferred competencies” from the state to the municipality in respect to the principle of subsidiarity. Owned competencies, as enacted by the law, echo with the definition of devolution provided by Zalengera et al. (2020). Transfers of power and responsibilities are not intended for delocalized units of the national government (deconcentration), or to parastatal entities (delegation), but to sub-national authorities who are made accountable to/for local people.

From competencies, it is possible to reveal some potential characteristic roles of the municipality in the energy domain. The existence of a range of roles that local authorities can play is as well an indicator for efficient decentralization as mentioned in part 2.1, but two different points are to be made: on the one hand if identifiable local roles are made possible by decentralization, through competencies, and on the other hand if they are appropriated, through actual actions implemented along with the competency. As explained by Zalengera et al. (2020), decentralization is not just a set of actions for themselves. It should rather be understood as a set of potentials and possibilities. Roles may exist in theory, without being

ceased. Identifying actions implemented by the municipality of Oujda allows for determining if roles are effectively appropriated.

(R1) First, the municipality holds a role of planning through the establishment of a municipality action plan (formerly called the “Plan Communal de Développement” and currently known as “Plan d’Action Communal”). It defines actions for local development on a six years basis, through a diagnostic of local needs and the identification of priorities and municipal resources (Organic Law 113-14, Art. 79). The specificity of Oujda in this domain is that the municipality developed a plan specific to its energy transition, namely the action plan for sustainable energy (Plan D’Action pour l’Energie Durable, 2015). It was introduced within the 2017-2022 municipality action plan, within the axis “Preservation of the environment and integration of the sustainable energy strategy”. Contrary to the first diagnosis realized in 2012 that was focusing exclusively on local heritage, the current PAED applies horizontally to all sectors. It distinguishes actions proper to local heritage and actions proper to the whole territory (Appendix A). The existence of this plan is seen as an exception by local stakeholders.

« Au niveau planification et stratégie, la commune a déjà une stratégie. Et ça c'est pas chez toutes les communes au Maroc. C'est rare qu'on trouve une commune qui applique une stratégie à long termes. Dans la commune de Khemisset, proche de Rabat, leur souci c'est la collecte des déchets. Ils discutent toute l'année de ça. Ils ont pas de prévision ou un plan. Les citoyens cherchent à avoir une vision. C'est plus grand qu'Oujda et ils ont pas un plan. Même en Afrique. Il y a deux ans il y avait un meeting africain des villes avec un plan. Oujda était parmi les leaders au niveau africain. Elle était parmi les villes top pour ce qui concerne une vision claire sur 10 ans. »²

The PAED provides essential tools for planning local energy transition that were actually advised by the 2012 report of ADEREE, GIZ and IDE-E (2012). It includes local indicators on the production and consumption of energy. It was for example able to identify the transport sector as the main greenhouse gas emitter (42%), followed by housing (35%) and the service sector (9%). Collecting this kind of data is necessary to target the most relevant actions for local stakeholders. The PAED (2015) defines objectives in terms of energy and emissions. The results expected were a decrease in 20,3% of greenhouse gas compared to 2013, representing 155.956 teqCO₂/an. Objectives also came with a structured budget proposal (Appendix B).

(R2) Second, the municipality holds a role of manager of public services as well as promoter of renewable energy and energy efficiency. It is named as the “demonstrator” role

² Yes Green Maroc, Oujda, 11/08/2021

by Zalengera et al. (2020). In Oujda, it can be identified through various actions, including a quite unique case of decentralized electricity production. In 2005, the municipality of Oujda created a rubbish tip used for waste energy recovery. Biogaz collected from the public rubbish tip is used to supply gas engines producing electricity for the site. Apart from the fact that there are very few rubbish tips of this type in Morocco (another one exist in Fès), the exception relies in the agreement passed with ONEE in 2012, in order to re-inject energy surplus into the national network. The municipality could negotiate a preferential injection tariff with the national organization in charge of the distribution of water and electricity (ADEREE, GIZ and IDE-E, 2012). According to our interviews, this is the only case of such a type of arrangement existing in Morocco between a municipality and ONEE.

In relation with the management of other public goods and services, the municipality of Oujda targeted transportation as a priority and prepared a “mega-project” at the city level in this area. It aims at replacing its bus fleet as well as at implementing a bus corridor in order to avoid traffic problems. This project has not been realized yet because of an apparent lack of funds, but we will come to that later on. The municipality also carried out several small-scale lightning projects in some district areas but still does not have any global planning for the city. It is interesting to note that this action has not been very developed yet, when the national level, the AMEE, considers it as the main local possibility for action.

« Généralement, les actions qui se font au niveau local sont liées à l'efficacité énergétique dans l'éclairage public. Généralement c'est ce qui se fait. Presque toutes les demandes qu'on a reçu de la part des communes, soit rurales ou urbaines, c'est généralement lié à l'éclairage public. Parce que c'est simple. C'est facile à faire. Et parce que la facture de l'éclairage public est généralement très très importante. Elle est parfois exorbitante. Et c'est pour ça que toutes les communes sont intéressées à réduire leur consommation et à remplacer les anciennes lampes avec des lampes leds. Pour les autres axes, à ma connaissance, pas vraiment. »³

Interviews reveal a real gap between what the national level knows about local action and what local stakeholders actually do. The national organization in charge of the energy efficiency strategy, AMEE, has no clue of the existing local dynamics in Oujda, although they are numerous. The employee of ONEE currently working in Taza (located in the Oriental region as well) did not know anything about local energy dynamics in Oujda either, even though he seemed to have an interest in decentralized energy initiatives.

« Non, Franchement non. Je ne sais pas. Déjà parce que depuis très longtemps on ne travaille pas avec Oujda et tous les projets récents que je connais sont dans d'autres régions. Donc je sais pas. Je vais poser la question. Je pense que le blocage de Jiha Tinou à Oujda... Pas le blocage du projet mais le blocage de la

³ Moroccan Agency for Energy Efficiency, zoom, 04/08/2021

collaboration dans le cadre de Jiha Tinou, entre l'AMEE et la Commune, je pense que rien n'a été fait sur la région. Sauf quelques projets qu'on a fait. Il y avait quelques installations solaires dans la région mais c'était dans le cadre d'un partenariat avec la Junta de Andalusia. Ca c'est différent. Pas avec la Commune.
»⁴

If it does not systematically prove that decentralization is at play for now, it is at least an indicator of certain autonomy of local stakeholders over their local energy transition. We shall here recall the decentralization indicator mentioned by Jacques Baguenard about noticeable proper activities realized by local authorities independently from central power and autonomous management of local affairs, despite possible financial difficulties (Badri, 2019).

Still within the reading of a “demonstrator” role, the municipality can act through optimizing energy management on public heritage falling under its jurisdiction. In this case, the PAED (2015) explicitly claims that a special effort from the municipality must be made on its own heritage in terms of renovation and application of thermal regulation. The current project carried out in cooperation with the french city of Lille, especially aims at renovating the hometown building as well as the building dedicated to a space for energy and climate information addressed to citizens (known as the “cellule info énergie climat”).

(R3) This leads us to come up with the third role provided by the current decentralization legal basis, the awareness raising role. This was actually the first competency recognized to local authorities by the national level. In Oujda, the municipality led an awareness campaign in 2019, together with several local societies which were trained to investigating methods and awareness. As indicated above, a space for informing citizens on housing renovation and climate was created and is still developing. The existence of such a place may contribute to impact renovations in private housing (citizens and private sector) rather than on municipal heritage only. This awareness raising role was also spread to other local authorities through the publication of a guide for implementing CIEC at the local level, but it would be necessary to deepen the research in order to determine actual exchanges between local authorities. The fact that the employee of ONEE, who is as well working with the NGO High Atlas Foundation on decentralized energy initiative in Taza, is not aware of local dynamics in Oujda may indicate that information is not efficiently spreading.

In any case, awareness raising is not only limited to the argument of reducing bills as we could have expected when confronting with Verdeil’s analysis (2011). Interviews as well show arguments based on the demonstration of environmental damages and the necessity to

⁴ Moroccan Agency for Energy Efficiency, zoom, 04/08/2021

change behaviors. Although the energy bill is mobilized to convince citizens of the benefits of RE and EE, local specificities do not make it very relevant. Two interviewees explained it by the fact that people in Oujda are not big energy consumers on average and that the sum of electricity bills is not a fatality for them.

« Avec la commune, on leur a montré comment réduire la facture énergétique, juste en ajustant quelque chose au niveau de leur résidence. En changeants des lampes, en changeant des appareils un peu électroménagers qui sont vieux et qui consomment beaucoup d'électricité. (...) Donc à Oujda du point de vue énergétique on a pas de soucis en relation avec le coût. (...) A l'échelle résidentielle les familles sont moyennes. Donc dans les domiciles on trouve pas des choses qui consomment beaucoup d'énergie. On trouve une télévision, un frigidaire, parfois des climatiseurs. Il faut savoir qu'au niveau d'Oujda, la moyenne d'utilisation du climatiseur est très faible. Très très faible. Par rapport à la ville de Tanger qui est déjà froide, le taux d'utilisation des climatiseurs est très élevé. (...) D'autre part, il y a cette culture de prestige et des objets de luxe. Le climatiseur pour la plupart des citoyens oujdis, ça entre toujours dans les objets de luxe. Donc c'est déjà une culture. Une famille qui a un climatiseur, elle se considère comme une famille riche. C'est une analyse un peu sociale qu'on a fait. Il y a même un chercheur de l'université qui fait des études sur la consommation, les achats. Il a vu que les climatiseurs ça appartient à une catégorie riche. Même la télévision. C'est rare les familles où on peut trouver deux ou trois télévisions. C'est en moyenne une seule à la maison. La moyenne de consommation mensuelle énergétique à Oujda, ça dépasse pas les 200 DH. Mais ça c'est la moyenne. Il y a des extrémités qui peuvent aller jusqu'à 700 DH. Les équipements consommateurs d'énergie sont des équipements ordinaires. »

(R4) Finally, the municipality embodies a role of regulator through issuing building permits with thermal requirements. Although thermal requirements are defined at the national level by a legislative decree adopted in 2015, the responsibility for local application is in the hands of the municipality. In Oujda, the Moroccan thermal regulation is applied only since 2021 (see part 3.2).

All those elements demonstrate that the municipality of Oujda developed a certain expertise and roles from the competencies they could get. Following the 2012 report of ADEREE, GIZ and IDE-E, they actually meet with most recommendations, including: establishing figures in terms of production and consumption of energy as well as in terms of GHGE, integrating the energy dimension upstream within the overall local planning, implementing innovative projects, including energy criteria in conditions to obtain building permits, communicating on RE and EE initiatives. As explained by the Germanwatch, the decentralization process changed local stakeholders' status, and allowed them to be recognized other competencies than just awareness raising.

« Il y a cinq ans, quand en tant qu'ONG marocaine tu venais taper à la porte d'une commune, d'une région ou d'un ministère pour parler transition énergétique, il y avait pas moyen. On t'écoutait pas et limite on te disait mais c'est quoi ce délire ? C'est pas tes compétences. Ce qui était compliqué... Nous on a vraiment vu avec le boulot qu'on a fait pendant trois ans, pour Rabat, la société civile, son travail c'est la sensibilisation. Ce qui est vrai. C'est vrai que les ONG ont un lien avec le grand public, pour

sensibiliser etc. Mais c'est pas que ça. C'est aussi de l'expertise la société civile. C'est des gens qui ont vraiment des connaissances hyper intéressantes quand tu mets en œuvre ce type de stratégie ou quand tu les dessines. Et ça, ils ont mis des dizaines d'années nos collègues marocains à faire comprendre ça. Et c'était pareil pour les villes. Les villes, (selon l'Etat) elles sont pas là pour amener de l'expertise, elles sont là pour mettre en place. Elles sont pas de l'expertise. C'est des agents de mise en œuvre. C'est vrai qu'avec cette régionalisation, officiellement, leur statut a changé. Elles deviennent... Les régions ont plus de pouvoir et les villes aussi. Ca devient des instances de pouvoir. Et ça ça a bougé des choses. »⁵

During each interview, the national strategy and its objectives in terms of energy independence was actually almost never mentioned contrary to what we could have expected following the readings of Far (2019) and Steinbacher (2015). Local action is not limited to applying the state's energy strategy. It is planned and implemented based on local needs.

« La transition énergétique ça peut être vu à différents niveaux. Pour un citoyen, c'est un changement de comportement énergétiquement durable. A notre niveau, c'est vraiment une politique concrète validée par un conseil qui est conscient de la chose. C'est à dire, on fait pas ça parce qu'il y a une politique nationale. C'est vrai qu'il y a une politique nationale, mais on sent que ça a un impacte sur le quotidien du citoyen local. »⁶

Although the AMEE does not seem very aware of current local actions in Oujda, this has not always been the case. In 2011, the first IFMERE (training institute for jobs related to RE and EE) was inaugurated by the King in Oujda. This kind of training centers has its significance because they may contribute to the creation of a local expertise in the energy domain and may help to prevent negative impacts of centralized energy production. Most of all, in 2012, the state initiated a strategy for the territorialization of the energy transition led by the ADEREE (former name of the AMEE). This strategy was framed by the "Jiha Tinou" project (literally meaning "my region" in Arabic and amazigh) which aimed at optimizing local stakeholders' capacities to contribute to national energy objectives (Agence Marocaine pour l'Efficacité Énergétique, 2021). It was supposed to lead to the establishment of regional conventions for EE. The Oriental region was designated as one of the three pilots for the territorial development of RE and EE and Oujda welcomed a local office of the ADEREE for a while.

This project is a very good illustration of the opportunities and limits of the decentralization process. As indicated above, this type of decentralized initiatives led to the recognition of local competencies, to the building of a local expertise and to the strengthening

⁵ Germanwatch, phone call, 16/08/2021

⁶ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

of a local “philosophy”⁷ which were determining for the municipality of Oujda. So was it for the two other localities part of the project, Agadir and Chefchaouen. Today, the three cities are still the local leaders of local energy transitions.

« Dans l'énergie il fallait un fondement qui a commencé en 2010 lorsqu'on a intégré un axe stratégique environnement et développement durable avec 10 projets. A l'époque, on a touché les actions prioritaires. 60% des projets c'était lié aux espaces verts parce qu'il y avait un manque flagrant. Et les autres liés à un projet sur les déchets et l'eau. Et en 2013 on avait l'idée de développer mais on savait pas vraiment comment on pouvait développer. C'est grâce au lancement de l'appel de Jiha Tinou, supervisé par l'ex ADEREE, actuellement devenue l'AMEE. Donc ce projet c'était très important. Dans tout le Maroc 17 collectivités locales ont déposé leur dossier. Et parmi ces 17, ils ont accepté trois projets, dont le projet d'Oujda. C'est là qu'on a eu notre initiation à la planification stratégique en matière d'énergie, mais spécialement pour le côté patrimoine communal comme ça se fait au niveau de la ville de Lille. L'objectif de Jiha Tinou, c'était dans le dossier, de renforcer les capacités des collectivités urbaines, mais à condition que ces collectivités déposent un document officielle qui permet d'intégrer sa région et jusqu'à trois collectivités rurales. Parce que, ils voulaient que une fois que les capacités de la collectivité urbaine ont été renforcées, c'est à elle de diffuser l'expérience à sa région. C'est pourquoi ils ont choisi trois villes pilotes: Oujda, Agadir et Chefchaouen. (...) On a été ciblé par Climat-MED puisque maintenant pour l'UE on est devenu une référence à l'échelle marocaine. Déjà on a eu CES-MED parce qu'on a été choisi par Jiha Tinou. Donc le choix était facile dans le CES-MED. Et Climat-MED c'était pareil. »

This is even more surprising that there are, to this date, very few signs of collaboration between the local level of Oujda and the AMEE. In order to understand this paradox, I will now enter into the analysis of the limits of the decentralization process. We demonstrated above the potential roles that local stakeholders may appropriate from the decentralization process. Looking at the limits will help us to cease what type of capacities must be developed by local stakeholders in order to complement the possibilities offered by decentralization.

3.2 Power transfers come with responsibility, but with few means: coordination, training and legal competencies are the limit

(L1) The lack of exchanges between the AMEE and the local level can be explained by the first limit identified, which is linked to coordination. Just like the Jiha Tinou project illustrates, the decentralization process inevitably implies coordination between the different levels of action that were allocated with legally recognized competencies. Yet, there is apparently no efficient local governance to coordinate the energy transition at the local level of Oujda. This lack has at least two different levels: coordination with the AMEE, and coordination with the regional council of Oriental.

⁷ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

Although the AMEE considers that obstacles to regional conventions are coming from the local level, local stakeholders identify many constraints proper to the organization of AMEE itself. They especially mention a lack of human and financial resources which does not allow for a systematic mediation between the local level and ministries, and which was demonstrated by the rapid closure of the local office in Oujda. Germanwatch also asserts that AMEE has no clear vision over inclusion and participation and is mainly focused on large-scale projects. In other words, although it was assigned to the management of energy territorialization, its main mission relies elsewhere. These characteristics proper to the national level did not allow for the development of a deep decentralized action in the Oriental region, or in Oujda, since the AMEE was unable to keep with its commitments. In this case, having a national or parastatal entity dedicated specifically to territorialization may have been more efficient to create a bridge between the two levels.

« Déjà, pour une petite précision, l'AMEE elle essaye depuis des années à instaurer une approche régionale en travaillant avec toutes les régions et en menant des partenariats avec les acteurs locaux. (...) On essaye de réunir tous les acteurs locaux de chaque région pour essayer de travailler sur une stratégie régionale. Donc chaque région normalement doit avoir un plan régional pour l'efficacité énergétique. On travaille aujourd'hui avec deux régions. On travaille avec la région de Tanger-Tétouan-Hoceima et Rabat-Salé-Kenitra. Normalement le travail est en cours. Les plans sont en cours de préparation. Mais avec les autres régions nous n'avons pas reçu de réponse. Normalement on initie toujours les demandes. On envoie des lettres aux régions pour commencer le travail avec eux. Mais généralement on ne reçoit pas de réponse. »⁸

« Parce que normalement l'ADEREE devait financer un projet d'éclairage public. Parce que c'était un des engagements de Jiha Tinou. Lorsqu'on a déposé le dossier, on a satisfait tous les éléments du dossier. Normalement, à travers ses partenaires stratégiques comme l'ADEME et la GIZ, l'ADEREE devait financer un à trois projets d'infrastructures. Malheureusement on est pas arrivé à l'entente sur le projet qui devait être... que nous on avait ciblé. Un projet d'éclairage. Ce qui a fait qu'à l'époque les relations n'ont pas duré parce que l'ADEREE n'a pas respecté ses engagements envers la commune. (...) Normalement l'AMEE devrait avoir des sièges dans les douze régions au Maroc. Cela va inciter au travail. Dans notre nouveau plaidoyer avec l'AMEE, on va voir un nouveau siège pour faciliter leur travail et faire les formations. On va pas aller jusqu'à Marrakech pour faire la formation. Si on fait une antenne qui fait tout dans la région, elle peut faire aussi la formation, la sensibilisation. Là on pourra faire vraiment Jiha Tinou, avec les moyens de bord, mais plus efficace. »⁹

Moreover, there is an apparent lack of coordination with the regional council which bogged the Jiha Tinou project down even more. Although the region and the municipality prepared the application to the project together, the municipality is far more advanced in terms of energy planning. Actually, at the moment, there is no energy strategy at the regional

⁸ Moroccan Agency for Energy Efficiency, zoom, 04/08/2021

⁹ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

level. The regional council only started to reflect on this topic in 2019, in the framework of an international project called “APIELO” with the German cooperation GIZ. This project, though, is currently in standby due to the diplomatic crisis between Morocco and Germany. Most of all, coordination between the regional level and the municipal level is compromised by political interests.

« Mais bien sûr, le travail entre la région et la commune, il y a des contraintes politiques. Si les deux collectivités n'ont pas les mêmes objectifs politiques, parfois ça bloque. Et c'est ce qui est arrivé. D'autre part, Jiha Tinou c'est un programme qui comme tous les autres a besoin de financements. Et lorsque les financements manquent, ça se bloque. C'est ce qui est arrivé après. Mais nous, la philosophie de Jiha Tinou, on a toujours adhéré. On a toujours eu cette vision, en alignement avec la région. Sans la région, on peut pas aller très loin. Le législateur marocain, dans le montage des PAC, même s'ils sont validés par un conseil, s'ils s'alignent pas aux orientations de la région, ils peuvent pas être acceptés par les walis. Donc il faut que la collectivité locale s'aligne avec les orientations de la région et la région s'aligne avec les orientations de la collectivité locale. C'est important. En général, c'est pareil en énergie. Ça fait partie des axes de la stratégie globale. (...) Une des infrastructures qui nous a encouragés dans notre stratégie c'est le fait qu'il y a une technopole. Et dans cette technopole normalement il y a une zone cleantech. Malheureusement elle a pas été trop développée. Pourquoi ? Si la région avait une stratégie régionale, normalement, la cleantech serait développée. Parce que c'est pas la commune d'Oujda qui va développée la cleantech. C'est économique. Tout ce qui est économique est une spécificité de la région et pas des collectivités locales. »¹⁰

As explained by the interviewee of the municipality of Oujda, the lack of coordination with the national and regional levels led to a cessation of dialogue with ADEREE and to difficulties in the development of the local Cleantech. This infrastructure was presented as an exemplary initiative in the 2012 report of ADEREE, GIZ and IDE-E. At the time, the Technopolis of Oujda was created within the framework of a 5 billion dollars national initiative led by the King, more specifically, a territorial adaptation of the Emergence Plan. A Cleantech was introduced as a competitive cluster encouraging private investments in sustainable development and in particular solar and wind energy as well as EE (ADEREE, GIZ and IDE-E, 2012). Almost ten years later, the Cleantech still has not developed. Contrary to what was identified by the report in 2012, when the decentralization law had just been adopted, the municipality of Oujda does not have any fiscal competency able to decide preferential tariffs for private companies. The fiscal competency remains in the hands of the regional level with the supervision of the state. The economic competency is also proper to the regional council. It is therefore difficult for the municipality to encourage private investments without the support of the Oriental region.

¹⁰ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

As mentioned by Zalendera et al. (2020), devolved governance depends a lot on multi-level coordination in terms of resources, commitment and competencies, but as well on the dynamics of complex networks of power, as it does for central governance. Without these two factors effectively functioning, we can notice that the municipality of Oujda faces another challenge: insufficient resources to match with responsibilities.

(L2) The direct consequence of the lack of coordination is the lack of financial means. It is even truer considering that urban areas are not the first recipients of state investments in RE and EE. Yes Green Maroc and ONEE both indicated that RE is much more spread in rural areas because it was part of the national strategy to spread electricity over the Moroccan territory. After the announcement of the national energy strategy in 2009, the government launched the programme PROMASOL in order to promote solar water heating in Morocco (International Energy Agency, 2019). Deployment of RE was seen, and still is, as a mean to spread electricity in isolated areas while avoiding an expensive connection to the national grid network. It explains why, according to Yes Green Maroc, it is still possible to obtain an 80% subvention on solar panels in rural areas. On the contrary, cities are already furnished with this connection to the national grid. Thus, municipalities and their citizens are not the privileged targets for state investments in RE installations. Besides, citizens are generally discouraged by heavy paperwork required for construction works in urban areas. They are not encouraged either by a potential decrease in their energy bill, contrary to rural people.

« Pour viser l'urbain, il est 100% couvert par le réseau existant. Il y a toujours des barrières économiques... Les gens vont toujours se rabattre sur le réseau parce que c'est... Le coût de l'électricité au Maroc est très bas par rapport à d'autres pays. (...) Oui, avec tout l'entretien... Et l'intermittence. Même l'investissement de départ... C'est pas très justifié. »¹¹

Due to these factors proper to urban areas, added to the lack of coordination, financial difficulties were inevitably mentioned by local stakeholders as an obstacle to their potential contribution to the energy transition. It has to be acknowledged that, if the municipality of Oujda was indeed able to produce a very impressive planning for its energy transition, many projects are waiting for funds in order to be effectively implemented (such as the renewable of the bus fleet). This factor is even heavier since last year considering the current sanitary crisis due to covid19.

« Il y a toujours le problème des financements. C'est pas encore réglé. Comme j'ai dit, malheureusement la divergence politique entre la région et la commune d'une part. Bien sûr il y a eu le

¹¹ ONEE, Oujda, 23/08/2021

problème du contexte du coronavirus qui a bloqué les projets classiques. Il y a un blocage de tous les financements du fonctionnement de la commune. »¹²

However, we cannot reduce limits in financial terms. The three pilot cities on local energy transition, and especially Oujda, are not among the wealthiest cities of Morocco. It appears that wealthiest and biggest local authorities located on the Atlantic coast (Rabat, Casablanca, Marrakech, Tanger) are actually not the most favorable spaces for the development of a comprehensive local energy transition strategy. The presence of a strong industrial fabric does not encourage this kind of path. Their geographical proximity with the capital city, Rabat, is not favorable either for the emergence of an autonomous energy planning.

« La première c'est peut être justement le fait d'être un peu loin du radar de Rabat (rires). C'est-à-dire que Rabat a eu plus tendance à regarder de très près Ouarzazate, Marrakech, Tanger, Casa, les grosses villes. Parce que c'est les centres économiques. Les petites villes à côté qui faisaient leur vie, ils y ont pas trop mis d'attention. Je pense que pour une fois c'était un avantage. Et en même temps je pense qu'il y a eu l'ouverture du débat et le fait qu'à Oujda ou dans sa région tu vas avoir moins d'acteurs contre. Tu as moins d'entreprises. Casa, dès que tu commences à parler de trafic c'est la cata. Tu peux pas avancer. Et l'énergie pareil. Il y a plein d'acteurs et d'entreprises qui sont un peu frileux. (...) Et il y a des grosses villes qui restent très compliquées à bouger. Casa c'est un très bon exemple, mais même Marrakech c'est difficile. Marrakech ça bouge de plus en plus parce qu'il y a le tourisme et les touristes aiment le tourisme vert. Mais les grosses villes avec l'industrialisation pas loin c'est très difficile. »¹³

Besides, by focusing on financial aspects, one could be tempted to conclude that the municipality of Oujda is dependent on international funds in order to develop RE and EE. Although it is not entirely wrong, it is not the absolute truth either and the nuance is important to understand. Referring to studies led in other countries of the Global South, several authors came to this conclusion (Kumar Höffken and Pols, 2021 ; Verdeil, 2011). Indeed, when looking at Oujda's actions on the energy transition, it is easy to misinterpret the contribution of international cooperation because most documented diagnosis and studies are financed by international funds (Appendix C). What we, as external observers, are not able to perceive however, is that the day to day functioning of the municipality service is mostly financed by national resources transferred to local authorities. That is also why, after getting to know the field, I decided not to relate this research to international transfers, but rather to local dynamics. It has to be noted that, even though financing is lacking, the municipality keeps with its own strategy thanks to what interviewee referred several times as "moyens de bord" (available means). If the 2012 report of ADEREE, GIZ and IDE-E (2012) mentions a certain

¹² Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

¹³ Germanwatch, phone call, 16/08/2021

frustration of some local authorities towards international decisions, this was not expressed once in the interviews I could get.

« Même avec le manque de financement. C'est de l'adaptation. On a des petits financements ? Tu t'adaptes à la situation. Tu vas financer les axes prioritaires et tu vas chercher les financements qui existent. (...) 90% de nos actions c'est l'Etat qui les finance. Parce que ce qui est international malheureusement c'est que les études. C'est ce que j'expliquais tout à l'heure. Que ce soit l'UE ou la coopération allemande, et même le PCD-ED, le financement c'est pas grand chose. »¹⁴

(L3) Last, but not least, is the legal barrier imposed to local stakeholders who do not possess any legislative competence. This limit was also identified by Zalengera et al. (2020) who found that clear signals from legislation were critical for operational decentralized governance in Malawi. In the case of Oujda and more generally of Morocco, all interviewees referred to legal obstacles to the recognition of low-voltage energy production. In 2016, Act 58-15 (See part 2.3) introduced the basis for the low-voltage electricity market which is of great potential to encourage small scale projects. But to this date, there is still no decree for RE connection to low-voltage (Choukri, Naddami and Hayani, 2017). This means that individual housing can invest in RE equipments if they wish, but that they will be unable to re-inject the energy surplus into the national grid.

Rules for medium voltage are not very clear either as confirmed by our interview with ONEE. Decree 2-15-772 adopted in 2015 defines the conditions for a “progressive” opening of the medium voltage network to RE generation. It still has not been fully implemented (International Energy Agency, 2019). The interview with AMEE is quite revealing since the interviewee even thought that medium voltage connection to the national grid was still forbidden. Civil society stakeholders explain this legal blockage by the power of lobbies. Other stakeholders with an engineer background rather refer to technical issues. In any case, the municipality has no choice but to wait for the national level to take the decision even though all local stakeholders agree on the necessity of this shift.

« Ils attendent toujours que la loi soit appliquée par les autorités, les ministères. La commune a pas cette souveraineté pour prendre des décisions législatives. Par ce que ce n'est pas un acteur législatif. Il faut attendre que le ministère de la justice valide la loi au niveau du Parlement. Et peut être cette loi sera fondée par des gens qui n'ont rien à voir avec la loi. C'est toujours un conflit. Pareil pour la loi 13:09 des énergies. Le mec qui a fait cette loi il a négligé tout le rôle des citoyens et c'est le plus important. »¹⁵

¹⁴ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

¹⁵ Yes Green Maroc, Oujda, 11/08/2021

« Pour la basse tension il faut encore du travail pour que cette loi puisse se mettre en place parce que le citoyen aussi peut contribuer. Si le citoyen s'intègre aussi, les objectifs de la stratégie nationale on aurait dû les atteindre même avant 2020. »¹⁶

The legal barrier was as well mentioned as an obstacle for time efficiency at the local level. It is interesting to confront, again, national and local perspectives here. Contrary to local stakeholders, AMEE considers state action as more effective and demonstrates quite a paternalistic vision towards them.

« Quand il y a une volonté au plus haut niveau de l'Etat, les choses marchent mieux. C'est clair. Surtout avec les énergies renouvelables. On a vu que les chantiers ont démarré rapidement. Ils sont là. Tout le monde parle des installations de la centrale de Ouarzazate. Mais au niveau local, c'est différent pour plusieurs raisons. Déjà les élus ne sont pas toujours ... (hésitation) Bon ils ne sont pas toujours sensibilisés au sujet. Et déjà les élus ne sont pas toujours éduqués, voilà. Il y a des gens qui n'ont même pas le brevet. Donc on peut pas s'attendre à ce que ces gens là aient une conscience par rapport à ce genre de sujets. Il y a un décalage entre la réalité et ce qu'il faut avoir. Ca aussi c'est un autre obstacle. Mais quand il y a une volonté, une requête qui vient du plus haut niveau de l'Etat, c'est différent. Les gens travaillent. Ca bouge. »¹⁷

« Lorsqu'on arrive à quelque chose de juridique, pas au niveau local mais au niveau central, on trouve des difficultés. Il faut attendre que le Ministre valide, c'est de la paperasse et tout un chemin pour faire peut-être juste un évènement. (...) L'autre (le Ministère) il est sur des données différentes, une durée différente. Il parle de 2030. Oujda peut pas attendre 2030 pour se développer, pour avoir une énergie renouvelable. On en a besoin maintenant, dès demain, peut être l'année prochaine. Alors que le ministère parle de 2025, 2030. C'est trop. Déjà au niveau de la région et de la ville, un jeune qui a 25 ans, est ce qu'il va attendre jusqu'à 2030 quand il aura 30 ans ou 35 ans ? C'est trop pour lui. Alors qu'on a une solution qui est locale et qu'on peut appliquer. »¹⁸

(4) Even when the law is effectively adopted at the national level, legislation may remain a barrier at the local level due to the lack of training. It was the case when the new constitution was adopted in 2011, or when the Moroccan thermal regulation came into effect in 2015. Local authorities needed time to appropriate their new competencies and how to apply them. In other words, they were expected to anticipate the law. They were made responsible.

« Oui. Ca a commencé en 2021. Parce que ça a commencé au moment où on a fait la digitalisation du service d'urbanisme. Maintenant c'est l'architecte qui est responsable de la livraison de ce formulaire. Il y a eu la loi. Et il y a le décret de la loi qui est sorti en 2015 (sur la réglementation thermique marocaine). Mais il a pas été mis en œuvre à cause de plusieurs problèmes de formation des agents des collectivités locales, de logistique, d'organisation. (...) Normalement les agences urbaines étaient censées former les collectivités locales sur cette loi. Certaines agences au Maroc l'on fait à l'échelle nationale. A l'échelle de l'Oriental j'ai pas vu de formation. On nous a informé sur la loi. On a reçu un document officiel. Mais pas

¹⁶ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

¹⁷ Moroccan Agency for Energy Efficiency, zoom, 04/08/2021

¹⁸ Yes Green Maroc, Oujda, 11/08/2021

la formation. C'est la commune qui s'est formée toute seule, soit à travers le PCD-ED, soit à travers les autres programmes de la GIZ ou autre. »¹⁹

« On s'est vachement rendu compte que les autorités marocaines, à l'époque, la constitution venait d'être changé. Les régions venaient d'être créées et avaient des nouvelles compétences. Mais c'était pas du tout mis en place. Ca restait du papier. (...)Même si à l'époque Ouarzazate, tu leur demandais leur avis mais ils ne savaient pas. A l'époque, ils intégraient des acteurs qui n'étaient pas formés et donc c'était bien gentil mais c'était pas efficace. (...) Le gros problème c'est la formation en fait. C'est-à-dire qu'en 2011-12-13, tu demandais aux régions ou même aux communes de réagir, elles savaient juste pas quoi dire. Elles savaient à peine comment marchait une centrale solaire. Donc tu peux pas leur demander leur avis. Tu peux pas arriver et dire faite ou réagissez. C'était beaucoup trop rapide. »²⁰

3.3 Other favorable factors for local action

Keeping in mind the limits that were pointed out, it is possible to identify other favorable factors than the sole decentralization in order to explain why local stakeholders in Oujda do appropriate potential roles and why they do participate in the local energy transition. In this part, I will present these factors (F) and explain why they contributed to reinforcing roles along with decentralization (R1,2,3,4) and how they can help exceeding limits (L1,2,3, 4).

(F1) The first factor that complements decentralization is the pre-requisites and motivation proper to the municipal team in charge of the local energy transition. It appears that the people composing the current department of planning and sustainable development in Oujda benefit from significant pre-requisites and competences due to their associative background. Further than the team's qualification, their double cap might provide them with a certain motivation to achieve environmental goals as well as a clean energy transition. The interviewee with whom I spoke is actually also a member of the local association "Friends of the environment". Local capacity partly explains why the municipality decided to turn its planning role towards local energy transition (R1). It is also an asset for anticipating the law and training other local stakeholders, such as municipal agents in the case of new decentralized competencies or new thermal regulations (R4, L4). Local capacity is identified by Zalengera et al. (2020) as necessary to understand local situations and local needs, to ensure awareness raising and trainings. They consider that the capacity to train is especially important in order to ensure a successful application of legislation.

« J'ai pu contribuer, avec l'équipe qui était chargée du plan communal de développement, vu l'expérience du service et de ma casquette associative dans laquelle j'ai pu bénéficier d'un ensemble de formations en matière d'application stratégique. (...) Et bien sûr les collectivités locales, lorsqu'il y a une

¹⁹ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

²⁰ Germanwatch, phone call, 16/08/2021

loi nouvelle, ils ont pas une vision claire de qui va gérer ça au sein de la commune. Ici on a une casquette sur comment ça se passe dans le monde associatif. On a essayé de gérer cette phase. C'est une phase de transition. Pas uniquement énergétique, mais une phase de transition législative. Il faut s'adapter à la nouvelle loi. (...) Moi je dirais que le premier point qui nous a mis en leader dans ce processus, c'est l'équipe énergie. C'est le point le plus important. (...) Le projet Jiha Tinou, un des points fondamentaux du dossier c'était l'équipe énergie. Eux ils travaillent avec cette vision. On peut travailler dans une commune avec des compétences qui travaille chacun dans son petit coin mais pas en équipe. »²¹

(F2) With those capacities in hands, the municipal department was able to successfully manage local projects. If we redraw the expansion of the local energy strategy, stakeholders were motivated by pioneer projects and by the recognition and trainings they could get from them. In Oujda, it started with the creation of the rubbish tip for the energy recovery of waste, and continued with Jiha Tinou, CES-MED, PCD-ED and Climat-MED (R1). The capacity to lead and to find innovative projects is also seen as an opportunity to attract national investments (L2).

« Le gros projet qui nous a vraiment poussé à développer la stratégie énergétique, c'est le projet phare lié à la valorisation énergétique des déchets de la Commune. C'était un projet phare, pas uniquement à l'échelle nationale, mais à l'échelle du continent africain. Il y a des études qui ont été développées depuis les années 2000 et on a vu que il fallait pas se contenter uniquement d'un projet mais d'un ensemble de projets et pourquoi pas d'un axe stratégique. Donc l'année 2013 on a rajouté le volet planification. (...) Il faut innover pour trouver les financements. Et même parfois l'Etat ne peut pas donner de l'argent. Si on lui prouve que le projet est modèle et efficace, il va financer. S'il marche c'est l'Etat qui va le diffuser au reste des collectivités locales. (...) Même l'Etat est en train d'identifier les collectivités qui sont politiquement engagées et aussi techniquement, qui sont innovantes dans leur démarche.»²²

(F3) In the course of implementing pilot projects, strengthening local capacities, and applying the 2011 constitution which required local planning, the municipality of Oujda was encouraged to think about a more strategic approach. At this point, they decided to turn the department “Environment and sustainable development” into the department of “Planning and sustainable development”. This way, they created a framework able to welcome a cross-sectoral energy transition. The presence of this type of department is very specific to Oujda and is responsible for the success of local planning according to our municipal interviewee. In other words, (R1) could be more easily appropriated especially thanks to the creation of this municipal department. The interviewee also mentions that it helped exceeding financial obstacles (L2).

²¹ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

²² Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

« Pour moi c'était très intéressant parce que, au début, on a eu du mal à intégrer la dimension environnement à part. Mais avec la planification, l'environnement rentrait par les bonnes portes. C'était facile à mettre en place un axe spécial pour l'environnement et le développement durable d'une part et d'autre part penser à l'intégration transversale de l'environnement aux autres axes stratégiques. Ça c'était important après pour la suite de la transition énergétique. Parce qu'il fallait déjà un axe dans lequel on peut intégrer l'énergie. (...) Depuis le début on était les trois villes concurrentes. Et je dirais qu'Oujda a un petit peu d'avance. Surtout que... Mon service, cette particularité n'existe pas dans les autres villes. Parce que le service planification d'Oujda c'est lui qui gère l'énergie, la communication. Tu vas pas trouver ce service au niveau de Chefchaouen ou d'Agadir. (...) C'est un service très sensible au niveau d'une collectivité locale marocaine, car il permet de décoder un programme politique, dans un programme technique et financier. Donc c'est ça. Mon service ne gère pas que l'énergie. Il gère tout le programme de développement local de la ville. Donc c'est facile de faire favoriser l'adoption d'une stratégie si on la maîtrise bien, qu'on est compétent. Tu as une vision globale des choses. Même avec le manque de financement. »²³

(F4) relies in the capacity of local stakeholders to build institutional arrangements. Although they might be more, I identified necessary arrangements with the four following stakeholders: international partners, national partners, other local authorities and civil society. I do not speak about private stakeholders here, due to a lack of field data, although they are certainly significant within the local governance of local energy transition.

International arrangements are seen by local stakeholders as an opportunity for capacity building. It is currently oriented towards the production of local diagnosis, but as well improvements of EE in public buildings (R2) and developments of awareness raising (R3). Plus, the municipal interviewee sees capacity building as useful in understanding new legislative regulations (L4). Most of all, international arrangements are an opportunity for appealing politicians. On the one hand, local diagnosis supported by international cooperation provided the municipal team with figures and arguments to convince the municipal council. On the other hand, it provided them with a recognition that the local politicians were glad to welcome. In 2016, Morocco hosted the COP22 in Marrakech, and the municipality of Oujda was invited to present its local strategy for energy transition. In this context, they could obtain political support for their energy planning (R1).

« Le système politique, une fois qu'il trouve devant lui une équipe compétente, on peut faire le plaidoyer. Il adhère au processus. Surtout que nous on a bien profiter, pour le cas d'Oujda, il y a eu Jiha Tinou mais aussi le grand projet de l'UE. C'est lui qui nous a permis de faire un diagnostic de tout le territoire et l'inventaire des émissions. (...) Et donc, ce qui nous a permis, après la constitution de l'équipe énergie et l'élaboration de ce travail, c'est comment convaincre le système politique. Et heureusement en 2016, le Maroc avait organisé la COP22 à Marrakech. Un grand évènement international comme celui là, pour nous c'était un des éléments les plus importants qui nous a permis... Tout le monde parlait de la COP22. (...) Donc bien sûr, tout le conseil a voté à l'unanimité sa première stratégie énergétique. J'ai bien

²³ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

profité de ce moment. Ça a été validé en octobre, et on est partie à Marrakech. Pour la première fois la commune participe dans un événement international comme celui là, la COP22. Et surtout dans la zone bleue des Nations Unies. C'est pas tout le monde qui rentre dans cette zone là. »²⁴

National arrangements have the potential to partly exceed coordination issues (L1) and financial limits (L3). The municipality of Oujda is currently trying to recover the dialogue with AMEE and is planning on signing a bilateral convention at the end of the year. The arrangement between the municipality of Oujda and the ONEE must be as well highlighted here. As explained in part 3.1, the negotiation of a preferential tariff with ONEE allowed the municipality to re-inject energy surplus into the national grid and therefore strengthened its role of manager of public services in the energy domain (R2). Thanks to this sleight of hand, the municipality turned into an energy producer, not only limited to its local site, but impacting the national production. The term sleight of hand sounds almost like a euphemism if we take into account that this arrangement was passed in 2011. Law 13:09, related to RE and adopted in 2010 (see part 2.3), indeed allowed an opening to medium-voltage, but the rules and conditions for a “progressive” opening were only define by Decree 2-15-772 in 2015. Our Interviewee from ONEE was not sure how this arrangement was made possible and supposed that the municipality could obtain an “exemption”. Further research would be needed to determine how they were able, not to say exceed, but at least to apply prematurely the law (L3).

« Ça, je crois c'est pas commun... parce que même... Je sais pas si la loi est très élaborée sur la moyenne tension, mais je vais me renseigner sur ce sujet. Peut-être qu'ils ont eu une dérogation ou quelque chose comme ça. La moyenne tension est encore en cours de validation, on est en train de réglementer ce projet. Mais on peut pas automatiquement se raccorder, en fait. (...) Je crois que c'est grâce à une dérogation... Bon, c'est deux entités étatiques, on peut avoir une entente. C'est pas un privé avec l'État...»²⁵

Arrangements with the regional council may as well contribute to get over coordination (L1) and financial (L2) problems as demonstrated in part 3.2. It may consequently contribute to achieve a more coherent planning (R1) and to support mega-projects at the city level of Oujda (R2). It is however very much dependent on political aspects, on which municipal agents have no power. The achievement of an arrangement between the two levels will mostly depend on the regional and municipal elections taking place on the 8th of September 2021.

« Sans la région, on peut pas aller très loin. Le législateur marocain, dans le montage des PAC, même s'ils sont validés par un conseil, s'ils s'alignent pas aux orientations de la région, ils peuvent pas être

²⁴ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

²⁵ ONEE, Oujda, 23/08/2021

acceptés par les walis. Donc il faut que la collectivité locale s'aligne avec les orientations de la région et la région s'aligne avec les orientations de la collectivité locale. C'est important. En général, c'est pareil en énergie. Ça fait partie des axes de la stratégie globale. (...) La région maintenant, elle est devenue un partenaire stratégique important vu les financements qu'elle a. Elle peut contribuer. Elle contribue déjà pour certains projets classiques de toutes les collectivités locales. Mais si elle avait validé sa propre stratégie régionale, ça pourrait nous aider à mettre en œuvre nos propres actions énergétiques. »²⁶

Arrangements with the civil society may reinforce (R3), as it was demonstrated during the 2019 awareness campaign in Oujda. At the time, the municipality collaborated with several local societies, including Yes Green Maroc. To a certain extent, this type of arrangement may also contribute to (R1), since the law now requires local authorities to consult citizens in order to build their local strategy. This capacity to make arrangements with the civil society is apparently reinforced by transparent communication proper to the local context of Oujda. The advocate of Yes Green Maroc acknowledges that Oujda's municipal agents demonstrate very fluent interactions with local societies and citizens. In terms of time efficiency at least, this may help to avoid administrative slowness (L3).

« A la Commune, il y a encore cette communication. Malgré qu'il y a parfois des vagues politiques, surtout dans les périodes comme actuellement, les périodes électorales. Mais c'est pas de telle façon à bloquer la communication. On trouve toujours que la commune est accessible. Je ne connais pas un citoyen qui est allé à la Commune et qui n'a pas été bien accueilli. C'est pour ça qu'on a choisi de sensibiliser le citoyen et de le ramener au niveau de la Commune. (...) Mais là où il y a des choses qui se font localement, il y a aucun retard. Nous sommes souverains dans nos choix. Dans une autre ville peut être que ça serait différent. Il faut toujours en venir au Maire, que le Maire consulte le gouverneur, que le gouverneur consulte le Ministre. C'est tout un chemin. Ici à Oujda on a cette opportunité, cette prédisposition auprès des citoyens et des services communaux. »²⁷

(F5) Besides, we shall highlight that local contribution to the energy transition is potentially facilitated by several local and regional specificities. The Oriental region is not considered either as touristic or industrial, letting space for other strategies to emerge. As explained in part 3.2, the absence of strong lobbies and the distance from Rabat may play a part in the autonomy of local decisions in Oujda. Two interviewees also talked about the expected opening of Nador's Harbor as a future game changer (city located on the north coast of the Oriental region). It is planned that this harbor will be as big as Tanger's harbor. According to interviewees, it will be a big deal to attract new investments and develop local energy strategies with the private sector.

²⁶ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

²⁷ Yes Green Maroc, Oujda, 11/08/2021

Contrary to what we could have thought, the will to reduce the municipal energy bill for economic reasons was almost never mentioned during interviews. Neither was the will to contribute to national objectives. On the contrary, the municipality claims its own strategy according to local needs.

« Nous en tant que collectivité locale, comme le gouvernement. Le gouvernement il a fait sa stratégie nationale et il l'a présenté au niveau de la COP pour attirer des financements. On a dit que c'est pareil pour nous. Si l'Etat a fait les NDC, nous on a fait les LDC avec un engagement local. Et on va vers la COP pour présenter notre première stratégie locale des énergies durables, mais en même temps, des bailleurs de fonds et des partenaires stratégiques peuvent financer notre stratégie d'énergie durable. »²⁸

(F6) Last, but not least, is the capacity to combine all the 5 factors in order to get political support. Not only international cooperation plays a part in this objective. Demonstrating capacities, experience, a strong planning, relevant arrangements and local interests are all elements to be mobilized. For that matter, I decided to state each factor one after the other in order to ensure the legibility of the paper. In reality, it would be more relevant to picture them as closely interrelated. All the factors identified reinforce one another.

Therefore, the analysis of the Moroccan legal framework of decentralization indicated that a devolution demarcated by specific competencies is indeed at work. They open areas for potential roles that can be (or not) embodied by municipal authorities. The field research demonstrated that the municipality of Oujda was able to cease several roles contributing to the local energy transition, including planning, promoting RE and EE through the management of public services, raising awareness and regulating construction permits.

We noticed a big difference between how the national level considers local contribution to the energy transition (limited, marginalized and not efficient), and how local stakeholders actually speak about and develop their local action (cross-sectoral, time-efficient, more relevant to local need and objectives). Gaps in discourses confirm two significant aspects. First, that it is necessary to consult local stakeholders when questioning their capacities. Second, that it exists a certain autonomy of Oujda's municipality to formulate its local strategy.

However, if opportunities can emerge from the core of decentralization itself, so can the limits. By tracing a delimited path for local action, the existence of competencies itself

²⁸ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

excludes potential actions out of the field. This functioning avoids overlaps in theory, but prevents local stakeholders to progress when they are unable to build a multi-level coordination in order to make their competences, commitments and resources complementary elements.

Institutional blockages with the AMEE, if they probably induced a decrease in financing, also probably contributed to an increase in local autonomy. Until now, the municipality of Oujda mainly acted with “available means”. It would be interesting to investigate later on if the future bilateral convention with AMEE, as well as the future opening of Nador’s harbor will impact local autonomy.

Finally, the assumption that decentralization itself is not sufficient for local contribution to the energy transition, and that it can even be the root of its own limits, lead us to conclude that decentralization is a selective process. It requires quite a lot of complementary factors that are not available to everyone, and which in the case of Oujda, were very specific to the local context. In other words, decentralization in other localities may lead a total absence of local contribution.

4. Vision of the energy transition in Oujda: a case of local neoliberalism?

4.1 Why defining energy “transition”

The dictionary of energy (Cleveland and Morris, 2015) defines energy transition as “a change in the primary form of energy consumption of a given society; e.g, the historic transition from wood to coal and then to oil and gas in industrial Europe; the current shift from biomass fuels to commercial energy in some areas of the developing world.” Most of scientific literature and international reports on energy transition does not further question this term and commonly describes it as a shift from high-carbon energy sources to low-carbon energy sources. But then, why not using the terms of energy shift, change, modification, evolution? Why is the term energy “transition” so commonly used?

It is interesting to note that some, for example, make the difference between energy transition and energy development according to the interests put behind it. Some Moroccan officials interviewed by Steinbacher (2015) acknowledge that “energy transition” is a trendy concept used to meet with international donors’ requirements. They argue that the term of “energy development” is more accurate in the Moroccan context, because transition appears more as a necessity than as an actual climate concern. Many authors also agree that reaching climate goals and an “energy transition” is not necessarily a priority in the global south (Kumar, Pols and Höffken, 2021 ; Jaglin and Verdeil, 2017 ; Bolzon, Rocher and Verdeil, 2013 ; Cuyler).

Should we use the commonly used word, *development*, for the global south in order to describe a less sophisticated energy change (thereby overlooking that policies from the global north, and especially those encouraging energy transition in the south, are also driven by economic interests)? Rather than seeing transition through the so-called good (and questionable) climate intentions of some, what is at stake, when using the word transition, is the way through which the process is analyzed within the society. This requires stepping back from energy for a bit.

The notion of transition has been used for a large spectrum of issues in order to question the “process of transformation” from one system to another and what it implies for societies (Guilhot, Jacquier-Roux and Debizet, 2020). For example, in transition discourses, the term transition refers to a radical transformation in reaction to the crisis of the dominant social life based on industrialism, capitalism, modernity and neo-liberalism (Escobar, 2015). The

movement of cities in transition is based on local initiatives and collects principles and practices in order to transform the current development model into a more ecological and decentralized model (Guilhot, Jacquier-Roux and Debizet, 2020).

The notion of transition, contrary to the words shift, change, evolution or development, indicates a flow from one state to another by suggesting a slow and gradual time-frame because the transformation to cover is substantial and cross-dimensional. In other words, the change of pattern may be radical, reason why the process to achieve this transformation will take time to spread. Thus, an analysis of transitions requires a multi-level sight. For instance, sustainability transition studies distinguish three steps in this time-frame: isolated innovations led by local stakeholders (niches), cultural values shared by the majority and slow to evolve (landscape), and between both the socio-technical context affected by values and producer of innovations (regime). Guilhot, Jacquier and Debizet (2020) also identify different levels of analysis from individuals to networks, passing by territories, and different time frames in energy usage related to learning, deterioration, obsolescence, recycling etc.

Therefore, questioning transition does not imply to only describe a shift, but to analyze the dynamics at work in the process of transformation. The risk in using too easily the notion of energy transition is to picture it as a change absolutely cut from any other factor beside energy and to apply it only according to technical concerns. Put this way, it is presented as a homogenous and inherently progressive process able to apply everywhere, hindering both potential resistances to the process and potential negative consequences. It forgets political and social changes, as well as specific local contexts part of the transition. This is exactly why the Moroccan national strategy has been pointed out by different authors who called for more energy justice and consideration for social factors (Aoui, Moulay and Rignall, 2020 ; Cantoni and Rignall, 2019). In reality, what appears to be a neutral evolution from one energy state to another, may hide different modalities, ideologies or visions according to the levels and stakeholders analyzed. Quoting Guilhot, Jacquier and Debizet (2020, p.35) “(...) Facing issues of transitions, it is impossible not to envision multi-scale perspectives. Here is drawn a bias probably significant because we are used to reflect in verticality whereas, just like thinking about scales demonstrates, we should learn to reflect in horizontality.”

In this work, analyzing the local scale, local stakeholders' actions and their specificities led me to think about energy transition in a more horizontal way and to question what appeared to be obvious at first, and turned out to have different modalities according to the person speaking. Wondering whether the Moroccan decentralization process allows for local

stakeholders to contribute to the *energy transition* interrogates if they do contribute by producing a specific local vision (different from what exists at the national level) and if they find obstacles in doing so. If the first part was more about autonomy in terms of action, this part is more about autonomy in terms of thinking of a vision, and will serve to impulse a discussion on definitions and meanings of energy transition given by local stakeholders.

4.2 Neoliberalism: core element of decentralization?

We made the hypothesis, at first, that the local vision of energy transition would be imbued with neoliberalist principles, not only based on the observations of several authors about the national strategy, but also on the roots of decentralization itself. Neoliberalism is defined by Friedrich Hayek as “a society in which unfettered markets allocate society’s wealth according to individual’s desires and productivity” (Sheppard, 2009, p.95). It is characterized by the belief that globalization and the opening of markets offer the best opportunities for national development and will lead to a prosperous global society. Countries are encouraged to adopt both good governance and best practices through what experts from “the core” consider as the best response to a problem. At the micro-scale level, individual behaviors are shaped by economic concerns. Citizens are typically made responsible for their well-being and for the interest of the rest of society (Sheppard, 2009).

It is interesting to notice that, just like energy transition is not sufficiently questioned, the transition to liberalism and contemporary globalization in Morocco is not deeply thought either according to Zemni and Bogaert (2011). It is rather considered as inevitable and reproduced from the western model of free-market society. Differences between countries are explained in terms of countries ahead and countries behind, the latest catching up with the first (Zemni and Bogaert, 2011). Therefore, it is likely that the neoliberal narrative would not offer a comprehensive framework to understand the complexity of energy transition, because it prevents from imagining trajectories proper to local specificities. In that sense, a dominant neoliberal vision of energy transition might constitute an obstacle for local stakeholders’ contribution to define the process according to their distinctive features.

In the Moroccan context of decentralization, Guerin-Jean (2018) outlines several characteristics of the neoliberal thinking. She notes a transformation in the Moroccan public action towards a neoliberal management, especially on RE, and demonstrates that a dominant rationality based on the principles of free-trade and market is being transmitted by

conditionality on development aid. This conditionality particularly highlights the necessity to implement dynamics of “good governance” which imply for nation states to decentralize and devolve powers on the grounds in order to increase local participation and responsiveness (Sheppard, 2009). Yet, good governance has been criticized for increasing corporate power and ending up with letting no choice to citizens (Sheppard, 2009).

In Morocco, Guerin-Jean (2018) observes that public institutions turn into enterprise models in terms of objectives and means. Projects become the most common form of public action and financing must be profitable in terms of political objectives (Guerin-Jean, 2018). Discourses are driven by consensus and expertise, a point also made by Rignall and Cantoni (2019) in their analysis of national Moroccan technopolitics and megaprojects in RE. In this perspective, public-private partnerships are predominantly put forward as the main mean for financing big infrastructure projects and, while links to the private sector intensify, the public sector contribution decreases.

According to Guerin (2018) the decentralization itself is therefore closely linked to neoliberalism and legitimized by the need to adapt to global competition. It is a way to implement the “good governance” required by most development aid banks or international organization (Guerin-Jean, 2018) which started with structural adjustments plans, at the same time as the neoliberalism turn in the 1980’s (Zemni and Bogaert, 2011) - this assumption may be criticized though, since decentralization in Morocco started in 1960 with the first communal charter.

Regional policies currently mobilize notions of competition and competitiveness and turn the territory into a product of public policy easy to manipulate for economic development. She notes the emergence of a “geography of capital” where the political organization of the territory is based in terms of investments’ attractiveness rather than in cultural or social criteria (Guerrin-Jean, 2018). Jafari and El Moujaddidi (2016) also explain the 2010 decision for advanced regionalization by the role that the region can play for national development and within the globalized economy. In this system, regions are competing with one another in order to develop their attractiveness. They also mention the need for more democracy and the specific issue of Sahara for which the State had initiated an advanced system of autonomy in order to reclaim it within national borders.

At the level of Oujda can be found some characteristics of the neoliberal thinking quite linked to the decentralization process. In 2015, the requirement of good governance was

introduced in municipal action plans through the organic law 113-14. Article 119 specifies that “municipal councils implement participative mechanisms for dialogue and consultation in order to encourage the participation of citizens and societies in the elaboration, monitoring and evaluation of action plans” (Organic Law 113-14, Art. 119-120). In concrete terms, municipalities are expected to create an advisory body called “Body of equity, equality of opportunities and gender approach”. Modalities to build this participative system were not given though. The municipality of Oujda decided to get support from the German cooperation GIZ. They organized a study day on participative diagnostic with civil society stakeholders in January 2017, during which participants were divided in several commissions, including a technical comity on environment and sustainable energy.

Projects indeed seem to be the common tool for implementing municipal action in the energy domain, although they cannot exist without the existence of a clear planning. This can be explained by the fact that municipal departments do not have a budget on their own. Their resources depend on the projects they present to the municipal council at the beginning of each mandate and the release of funds partly depends on political objectives for that reason. Besides, since financial resources are limited, municipal agents must as well look for funds within national sector programs and international programs selecting on the basis of projects.

« Nous en tant que fonctionnaire, on est là pour assurer la durabilité du processus. Un politicien il est là pour six ans. Donc d'un programme il attend des résultats. Et lorsqu'il atteint pas ses résultats, normalement ça impacte sur son programme politique. (...) Le politicien il a toujours... Il veut que cette transition soit visible pour le citoyen. On veut pas entendre que c'est de la science fiction. Non, c'est du réel, c'est du quotidien. C'est pas un discours d'époque dans la technique. »²⁹

Public-private partnerships are mobilized as a way to facilitate public intervention when funds are lacking for bigger infrastructures and their management. This is the case for the rubbish tip of Oujda but we should as well mention the interesting case of the space for energy and climate information (known as “cellule info énergie climat”, CIEC). The building chosen to welcome this CIEC is currently located in a “leisure park” in a popular neighborhood of Oujda called “Takadoum”. This area benefited from a project of reinstatement of the old buildings of the very first train station of Morocco “Mir Niger”. It was turned into a place dedicated to welcome citizens and provide kids and youth with leisure infrastructures. At the time, the department of planning and sustainability chose one of those buildings for its CIEC, forecasting that it would benefit from a large number of visitors. Since

²⁹ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

the CIEC aims at providing information to the public, the strategy here was about making it accessible in a much visited place, likely to be socially mixed because of its location.

However, the reinstatement ended in 2016 and the leisure park has not been opened since, due to the lack of resources of the municipality for managing the place. This year, in 2021, the municipal council finally chose a private company within the framework of a public tender, known as “City club”. The CIEC will be the only building remaining under municipal management but the conditions in which the public will be welcomed may be different than what had been imagined five years ago under the public service. According to an employee working at the international department, the municipality faces difficulties with public-private partnerships. Private companies, after investing for a long time of exploitation (9 years in the case of the leisure park), are often reluctant to let go and tend to replace public intervention. We observe a situation in which public-private partnerships are primarily used as facilitators, partly because decentralization did not provide a sufficient transfer of means, and in which private companies negotiate their conditions, sometimes at the cost of the vision thought by the public service in the first place. Management conditions for the leisure park have not been determined yet but we might expect a fee at the entry of the park, whereas the first purpose of the CIEC was to be easy to reach. However, private companies need to obtain the agreement of the municipal council who also has a bargaining power. In that sense, the private sector is not absolutely unfettered.

It is interesting to note that if the framework of the decentralization process may indeed have some neoliberal characteristics, it does not automatically mean that local stakeholders concur with it. In the cases of good governance bodies, public action under projects’ shape or public-private partnerships, local stakeholders rather deal with what they have at their disposal. Looking at local stakeholders’ discourses we actually find a very large spectrum of visions of the energy transition. The common definition of substitution of fossil fuel by clean energies came up but was not commonly brought. The idea of energy-mix was also mentioned once as part of the transition, since Morocco has new potentials in terms of natural gas, especially in the Oriental Region which used to be dominated by coal.

« Parlons de la transition énergétique. Il faut un peu trouver des substitutions pour le pétrole et les énergies fossiles. C'est déjà une des pièces qu'on trouve au Maroc et qu'on cherche à développer. »³⁰

« Maintenant au Maroc on parle beaucoup d'une nouvelle source d'énergie qui a été découverte. C'est le gaz naturel. Il a été découvert dans la région de l'Oriental, au sud de la station d'énergie renouvelable. La

³⁰ Yes Green Maroc, Oujda, 11/08/2021

première station du thermo-solaire au Maroc, Aïn-Beni-Mathar. Ce gaz, même s'il est pas renouvelable, on peut faire de l'efficacité au travers du gaz, au lieu d'utiliser le charbon. La région doit avoir une stratégie. »³¹

Neoliberal traces can be identified in some interviews. The AMEE consents that local stakeholders' interest shifted from energy efficiency to developing green industries, following the national move. AMEE has indeed been charged with a new approach based on green economy and now depends on the Ministry of Industries rather than the Ministry of Energy. At the local level, one stakeholder from the civil society especially highlights the central role of innovation, research and private investments as well as a definition of development based strictly on economic terms. Most of all, the discourse mobilizes arguments that can be related to Sheppard's (2009) analysis of neoliberalism: development is envisioned as a single path traced by northern countries, globalization is seen as a possibility for the south to catch up and the discourse is driven by an emphasis on expertise and good practices.

« Toujours on a besoin de l'expertise. Elle permet de nous rapprocher des Etats qui ont fait une aventure ou bien une expérience ou une avancée. Par exemple sur l'énergie il faut coopérer avec la France, avec l'Allemagne. Il faut pas coopérer avec des pays qui... Voilà... Seulement si on veut leur passer notre expertise. Mais Nord-Sud, on a besoin de cette coopération. Par exemple il y a des typologies, des stratégies qui ont donné leurs fruits. Il faut appliquer ces stratégies, mais avec des modulations nationales parce qu'il faut adapter ces stratégies aux conditions nationales. C'est ça l'importance d'avoir cette coopération. Et peut être ouvrir beaucoup de marchés. Marché du travail, marché de l'électricité etc. (...) Bien sûr c'est pas toujours égal à 100% dans les deux sens. Toujours il y a quelqu'un qui passe beaucoup par l'autre. C'est pas toujours équilibré mais dans l'avenir c'est l'objectif que ce soit équilibré. Peut être que Lille, en 2035, aura les mêmes échanges avec Oujda. Une fois qu'on aura une infrastructure qui est bonne, des plans exécutables et avec une vision réalisable et que le citoyen s'impliquera dans la politique locale... Le citoyen oujdi s'il vient à Lille il aura des difficultés pour investir. A l'heure actuelle si on prend quelqu'un de la région d'Oujda et qu'on le place à Lille, il va pas réussir. Tout simplement parce qu'il n'a pas la même gamme du côté Oujda, et il n'a pas les mêmes dispositifs. Mais si on arrive à se rapprocher ou avoir une convergence du point de vue logistique, disposition, on aura une seule ville en deux. »³²

This stakeholder called upon notions of competition and competitiveness between cities, in which can be found what was observed by Guerin (2018), that is to say that territory can be manipulated for economic purposes. The idea that people in Oujda are “pre-disposed” to change echoes as well with the modernization discourse of Parsons who identifies steps to reach development from traditional societies, to the age of mass consumption and passing by a preconditions to takeoff (Sheppard, 2009). The stakeholder from the municipality of Oujda

³¹ Department of Planning and Sustainable Development of the Municipality of Oujda, Oujda, 16/08/2021

³² Yes Green Maroc, Oujda, 11/08/2021

also referred to competition and rivalries between cities, but more as a necessary step for recognition and for funds.

« Je critique toujours la production des déchets au Maroc et en Afrique. Mais lorsqu'on compare Oujda par rapport à d'autres villes qui ont beaucoup de ressources économiques, je classe Oujda la première au Maroc. C'est la première dans la gestion des déchets. C'est la première ville au Maroc qui a fait une décharge contrôlée. C'est la première ville qui a fait le soutirage de biogaz et la production par le biogaz. C'est la deuxième en Afrique qui a fait ça. Mais le problème c'est la délégation dans le cahier des charges qui ne se développe pas à la société civile. On était en avance il y a quinze ans mais il y a des villes qui se rapprochent de nous et peut-être elles vont nous dépasser. A l'exemple de Fès et Rabat. Ils font le tri sélectif au niveau de la décharge. Il y a des efforts mais il faut les développer, pas laisser stable. La manière de penser doit être changée. Mais il faut toujours intégrer le citoyen. Parce que sans intégrer le citoyen qui va faire le tri ou séparer les déchets ? Mais grosso modo la stratégie communale d'Oujda est parmi les meilleures. Surtout qu'Oujda comme je l'ai dit, c'est facile à manipuler au niveau de l'orientation stratégique. »³³

All local stakeholders insisted very much on the participation of local citizens into the energy transition although there are some variations in their approach to explain it. Yes Green Maroc applies a neoliberal vision here again, in which individuals are empowered to choose further than their proper interest and are made responsible for their own well-being as well as that of society (Sheppard, 2009). The discourse emphasizes that liberalization and competition will provide the citizen with free choice and responsibility. It adopts quite a paternalist approach in which social change is seen as a facilitator to turn citizens into reasonable and responsible beings. Other local stakeholders rather insist on the importance to open the national network to the low-voltage in order to imply citizens into the energy transition.

« Donc c'est tout un changement social qui doit être avec. Parce que la recette énergétique actuelle au Maroc, elle est imposée. On peut dire qu'elle est imposée au citoyen. Le citoyen ne choisit pas, actuellement, le taux d'énergie à consommer. Mais d'ici 2030, le Maroc fait parmi ses défis, que le citoyen soit le responsable de chaque coût énergétique. Avec la régionalisation avancée que le Maroc met dernièrement pour sa politique territoriale, il y aura au niveau de chaque région, des régies d'énergie qui sont responsable de la distribution pour permettre à tous les citoyens d'avoir un accès à l'énergie, propre ou fossile. Comme ça c'est le citoyen qui aura le choix. Par exemple, actuellement si le citoyen veut acheter des plaques photovoltaïques, elles sont pas partout. Et le coût il est très cher. Donc d'ici dix ans, il y aura tout type de concurrence. Il y aura tout type d'investisseurs. Comme ça le citoyen sera capable de choisir et de s'approvisionner en énergie. C'est l'importance d'un changement social. Et si le citoyen n'est pas prêt, socialement, économiquement, et même au niveau conscience, peut être on aura des difficultés sur ce choix. (...) C'est pourquoi il y a l'importance de sensibiliser les gens et de les impliquer. Parce que toutes les familles ne sont pas à un tel niveau intellectuel d'avoir une auto-compréhension des choses. On ne peut pas avoir une auto-orientation vers la meilleure des choses. Il faut toujours les inciter, leur expliquer le bon chemin pour choisir les équipements et les énergies propres. (...) C'est un choix qui sera pris par le citoyen. Mais il sera pénalisé là où il y a une facture qui dépasse les normes. D'ici 2030 le Maroc pourra produire la même quantité d'énergie ordinaire pour subvenir aux besoins des citoyens. Il sera forcé à avoir d'autres alternatives. Soit il diminue le coût de la facture pour être à la norme, soit s'il

³³ Yes Green Maroc, Oujda, 11/08/2021

veut consommer trop, il doit avoir des panneaux solaires, acheter un véhicule électrique, avoir des batteries pour stocker l'énergie. Sinon il sera pénalisé. (...)»³⁴

Due to the lack of interviews realized, it is difficult to ascertain if the neoliberal discourse can be explained by the individual characteristics of the person interviewed for Yes Green Maroc, or if it is more diffused among local stakeholders due to the decentralized framework. It has to be noted that this specific person is a member of an economic cluster for waste recovery. As demonstrated by the four local scenarios for energy transition carried out by Debizet (2015), it is likely that visions on energy transition would vary greatly according to the local stakeholders. Research should be deepened in order to determine if some common characteristics can be found in discourses of a large variety of local stakeholders. In any case, as mentioned in part 3 of this thesis, interviews demonstrated that national objectives were not often mentioned at the local level. Local stakeholders all called for a plurality of definitions when speaking about energy transition, between different levels – citizens, local authorities, national level - and between different localities.

« Et en parlant de la transition énergétique, qu'est ce qu'on veut dire de ça ? Parce que ça diffère d'un pays à l'autre, d'une région à l'autre. On peut pas parler d'une ville d'Oujda à 100% renouvelable actuellement. Parce qu'il y a toute une partie industrielle, des ouvrages, des installations qui sont fondées pour consommer une énergie qui n'est pas une énergie propre. Donc la logistique première installée, c'est pas adapté à 100% à recevoir une énergie propre. (...) Pourquoi pas ici à Oujda ? On a tout un soleil qui est là. On a un climat qui peut favoriser une forte production. Si on parle de la transition énergétique, il faut parler de toute sorte d'énergie renouvelable, durable, chacun selon ses moyens et le type d'énergie qu'il peut produire. On peut pas exiger un seul type d'énergie le long du Maroc. Lorsqu'on parle d'énergie éolienne, on peut pas installer de l'éolien à Oujda parce qu'il y a pas assez de vent assez fort. On peut installer ça au niveau des hauts plateaux, là où le vent souffle tout le temps. Mais à Oujda on a des capacités pour installer des panneaux photovoltaïques. (...) D'Oujda, on peut aller vite à Berkane, Nador et ainsi de suite. Sur le plan communication, des traditions, il y a un tas de choses, de convergences qui peuvent faciliter la communication. Au contraire, on peut pas se jeter dans un pays lointain où il y a une culture différente. On fait ça de façon progressive. On part d'un quartier, puis aux autres quartiers voisins, puis la ville et une autre villes et ainsi de suite. »³⁵

Even the most neoliberal discourse is mixed with ideas of local adaptations and the significance of socio-cultural criteria. Local stakeholders all insisted on the need to take into account local specificities, including traditions which are not put in opposition with modernism in this case. An approach based on culture and traditions is rather seen as a facilitator to disseminate initiatives and spread energy transition. This idea of local

³⁴ Yes Green Maroc, Oujda, 11/08/2021

³⁵ Yes Green Maroc, Oujda, 11/08/2021

innovations spreading to other localities is not to recall the notion of niches proper to transition discourses. All those elements confirm the necessity to think of a more complex approach to energy transition than the sole shift of energy.

5. Conclusion

To conclude, this research started from astonishment. On the one hand, very few data was available on local stakeholders' contribution to energy transition in Morocco, considering the fact that the decentralization process was deepened only ten years ago. On the other hand, academic literature about the Moroccan energy strategy and about energy transition in other emergent countries led no assessment of the existence of initiatives coming from the bottom. Yet, a short field research of a Moroccan city located in a marginalized area of Morocco, Oujda in the Oriental region, revealed a quite dynamic context for energy transition. The main question was therefore about whether the Moroccan decentralization process allows for local stakeholders to contribute to the energy transition. The two hypotheses I proposed were meant to interrogate local autonomy by determining to which extent decentralization is the provider for local capacities, both in terms of field of action, and in terms of vision.

Based on the reading of the legal framework confronted both to actions carried out by the municipality of Oujda and to factors elaborated by Zalengera et al. (2020), I was able to identify four main roles played by the municipality on the grounds of its legal competencies - planner, promoter of RE and EE by managing public services, sensitizing and regulator - , and six complementary favorable factors for local action. The results of our research suggest that those favorable factors are essential for local stakeholders to effectively appropriate the four roles coming from the legal basis of decentralization and to overcome limits implied by decentralization itself (Appendix D). Therefore our first hypothesis (H1) appears to be true since decentralization alone is not enough for local stakeholders to act on energy transition. Decentralization is selective in the sense that not all local authorities are able to mobilize all complementary factors.

Reflecting upon the second hypothesis (H2) allowed to impel a discussion over the meaning of the energy transition itself, which is impressively lacking in current literature, especially on the Moroccan case. Ignoring multidimensional characteristics inherent to "transition" might hide potential resistances or negative consequences of a too homogenous and technical energy transition. For that reason, and based on the work of Guilhot, Jacquier-Roux and Debizet (2020), I proposed to define energy transition as a slow, gradual, cross-dimensional and multi-scale process of transformation from one energy state to another. From

this definition, energy transition must be analyzed through the dynamics at work in the process of transformation.

From data available, it seems difficult to give a final answer to H2, but we can however draw some interesting observations. Locally, traces of neoliberalism can indeed be found in the roots of decentralization in terms of mechanisms of good governance, shape and motivation of public action, and resort to public-private partnerships jeopardizing public action and vision. It does not necessarily mean that local authorities concur with this vision. However, it indicates that if they have a certain autonomy in terms of action (H1), they also have difficulties to apply their vision within those actions because decentralization and the limits it implies pushes towards neoliberalism (e.g. the CIEC). In that perspective H2 is likely to be true. Neoliberalism imbued in decentralization does not favor the emergence of specific local trajectories and might hinder local stakeholders' contribution to promoting their vision. Yet, although one specific stakeholder from a local society demonstrated many similarities with the neoliberal discourse, all interviews insisted on the significance of local specificities, including socio-cultural criteria. Further research should be carried out in order to analyze this potential mix between neoliberal ideas and claims of local features.

Finally, the reflection around both hypotheses confirmed the necessity to look directly at the local level in order to attest if actual dynamics are occurring from the bottom, and to grasp the complexity of the transition process. Concluding about local stakeholders' actions from an observation of the national level leads to erase local initiatives and specific orientations. Nevertheless, both hypotheses did not allow for a comprehensive study of "urban governance" as theorized by Le Gales (1995). This concept better recognizes the fragmentation of local power and values both vertical and horizontal shapes of public action. Hence, it gives more importance to social change and to the complexity of urban societies, which we must recognize to be essential for understanding transitions at the city level. I specified in introduction that, in this research, local stakeholders were understood mainly as local authorities and to a certain extent to civil society. This choice was made especially to take into account time limitations to realize the research. Thus, it comes more under the concept of "urban government" which Le Galès legitimately criticizes for being too institutional and for implying that natural local power relies in the local authority. Questioning the local level therefore would gain not to be limited to the politico-administrative framework. It would lead to better cease the variety of visions among urban

stakeholders and maybe to find other local favorable factors outside of the municipal realm. Such an analysis would require a much larger qualitative inquiry with a large variety of local stakeholders, especially from local societies, citizens and private stakeholders.

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Appendix A

PAED Oujda : Patrimoine de la Commune d'Oujda

Secteur	Intitulé Action
Bâtiments et équipements communaux	Mise en place d'une équipe pluridisciplinaire en charge des politiques énergie-climat
	Elaboration d'une charte de bonne gestion énergétique communale
	Elaboration d'un guide des éco-gestes et de l'efficacité énergétique au travail
	Développement d'outils de suivi et création d'un CIFCC
	Rénovation de 50% des bâtiments existants
	Application du CEEB à 100% des nouveaux bâtiments communaux
	Promotion de l'autoproduction énergétique sur les bâtiments communaux
Eclairage public	Elaboration d'un Schéma Directeur d'Aménagement Lumière (SDAL)
	Mise en place de mesures correctives sur 20% des points lumineux
	Réduction de la durée d'éclairage sur 20% des points lumineux
	Installation de régulateurs de tension sur 13% des points lumineux
	Remplacement de 4200 lampes au mercure par des ampoules SHP 70W
	Mise en place de technologies économes sur 20% des nouveaux points lumineux
Flotte municipale	Renforcement des procédures de maintenance et de suivi des flottes de véhicules municipales et de collecte des déchets
	Formation de 50% des conducteurs à l'éco-conduite
	Mise en place d'un SIG pour la collecte des déchets
	Renouvellement de 50% des véhicules de la flotte municipale et de 50% de la flotte de collecte des déchets
Eau potable	Optimisation de la distribution d'eau potable

PAED Oujda : Territoire de la Commune d'Oujda

Secteur	Intitulé Action
Logements résidentiels	Application du CEEB à 100% des nouveaux logements
	Mise en place d'un point info énergie
	Elaboration d'un guide des éco-gestes et de l'efficacité énergétique dans le logement
	Sensibilisation des ménages à l'installation de chauffe-eau solaires et de panneaux photovoltaïques
Transport	Amélioration du réseau de transport public
	Aménagement de 12 pôles d'échange
	Construction de 7 parkings relais
	Optimisation de la circulation et accompagnement de la modernisation des taxis
	Aménagement de couloirs de bus et 3 BHNS
	Aménagement de pistes cyclables
	Amélioration de la livraison de marchandises en centre-ville
Développement d'une offre de transport ferré sur le territoire	
Tertiaire	Création d'un observatoire des déplacements
	Lancement d'un programme de formation et d'accompagnement des administrations publiques dans leurs démarches de maîtrise de l'énergie
	Mobilisation des acteurs du secteur tertiaire en vue de la réalisation d'audits énergétiques
	Application des normes du CEEB à 100% des nouvelles unités tertiaires
Energies renouvelables	Incitations des acteurs tertiaires à la mise en place d'installations solaires pilotes
	Etude du potentiel géothermique de la source thermique de Ben Kachour
Activités industrielles	Mise en place d'une centrale solaire photovoltaïque
	Sensibilisation des industries en vue de la réalisation d'audits énergétiques et de la mise en œuvre des recommandations
Déchets	Mise en place d'un projet intégré de valorisation des déchets ménagers

Source: Extract of a booklet realized by the municipality of Oujda for COP22 in Marrakech (2016)

Appendix B

Axe stratégique 2 : Environnement et Energie Durable					
Environnement					
Nombre projets	Intitulé du projet	Montant global (MDH)	Contribution Commune (MDH)	Partenaires	Contribution (MDH)
1	Programme d'accompagnement de l'extension du réseau d'eau potable.	106	-	RADEEO	106
2	Programme d'accompagnement de l'extension du réseau d'assainissement liquide.	91	-	RADEEO	91
3	Programme de protection de la ville contre les inondations (bassins de rétention).	26	-	RADEEO, ABHM	26
4	Projet de mise à niveau du domaine vert de l'Oued Nachef sur une longueur de 13 kms.	285	20	DGCL, MHPV, MEMEE, CRO, ADO, CP, ABHM	265
5	création et mise à niveau des jardins, parcs publics et des toilettes publiques	11	11	-	-
6	Projet de traitement du lixiviat.	40	-	MEMEE, DGCL	40
7	Mise en place d'une unité de tri et de recyclage des déchets au niveau de la décharge.	8	-	MEMEE, CRO	8
Energie Durable					
8	Mise en œuvre de la première tranche du PDMU (3 couloirs bus, 3 pôles d'échange, 3 pôles de correspondances) (étude et réalisation)	317	135	DGCL, AL Omrane	182
9	mise en place d'un système de régulation automatique des feux de signalisation automatique.	2	2	-	-
10	Renouvellement 100% de la flotte des bus (équipement et infrastructure).	231,6	-	Partenaire Privé	231,6
11	Projet de mise en place de la mobilité électrique (étude et réalisation).	6,5	1,5	MEMEE	5
12	Projet d'Efficacité Energétique de l'éclairage public	20	-	DGCL	20
13	Projet de Rénovation Energétique et d'Equipement de l'annexe Sidi Driss Al Qadi (Ancienne gare d'Oujda) (étude et réalisation).	11	1,5	DGCL, CRO, ADO, GIZ	9,5
14	Equipement des Bâtiments Communaux en Panneaux Photovoltaïques (Projet Pilote)	5	5	-	-
15	Projet Electricité Verte Oujda - Solaire 1(PEVO- S1) (Mise en place d'une centrale photovoltaïque gérée en SDL) (étude et réalisation).	30	18	Partenaire Privé	12
16	Etude du Potentiel géothermique de la station thermique de Benkachour.	0,5	0,5	MEMEE, GIZ, Ville de Lille	1
17	Mise en place du Tableau de Bord de Gestion Energétique (TBGE)	0,5			
18	Elaboration d'un diagnostic de vulnérabilité.	0,5			
Sensibilisation, Education, Formation et Communication Environnementale et d'Energie Durable					
19	Mise en place de l'Observatoire de Déplacement.	0,2	0,1	DGCL	0,1
20	Mise en place de la cellule Info-Energie.	0,2	0,1	MEMEE, GIZ	0,1
21	Elaboration et mise en œuvre d'un plan de formation d'environnement et d'énergie durable.	0,7	0,2	MEMEE, GIZ	0,5
22	Elaboration et mise en œuvre d'un plan de communication environnementale et d'énergie durable.	0,7	0,2	MEMEE, GIZ	0,5
23	Elaboration et mise en œuvre d'un plan de sensibilisation et d'éducation à l'environnement et l'énergie durable.	0,7	0,2	MEMEE, GIZ	0,5
23	Montant global de l'axe stratégique 2 (MDH)	1194,1	195,3	-	998,8

Source: PAED's budget published by the Municipality of Oujda

Appendix C

Programmes et Projets appuyant la SED de la CO

- Jiha Tinou             

Appendix D

Potential roles of the municipality in the local energy transition provided by decentralization	Limits to local stakeholders' contribution to the energy transition rooted in decentralization	Favorable factors strengthening local stakeholders' contribution to energy transition
<p>(R1) Planning through the establishment of a municipality action plan</p> <p>(R2) Promoting RE and EE through the management of public services</p> <p>(R3) Sensitizing citizens, the private sector and municipal agents</p> <p>(R4) Regulating through issuing building permits with thermal requirements</p>	<p>(L1) Coordinating competences, commitments and resources with other local authorities and with the state</p> <p>(L2) Finding funding in order to finance infrastructure projects</p> <p>(L3) Adapting to and applying the legal framework elaborated at the national level</p>	<p>(F1) Mobilizing local capacities (e.g. competences and motivation of the municipal team strengthened by an associative background)</p> <p>(F2) Implementing pioneer projects (e.g. the rubbish tip)</p> <p>(F3) Integrating energy transition in the overall municipal planning strategy through the creation of a dedicated department (e.g. the department of planning and sustainable development)</p> <p>(F4) Building institutional arrangements with international partners, national partners, other local authorities and civil society</p> <p>(F5) Identifying favorable local specificities (e.g. the absence of strong industrial lobbies, distance from the dynamic core of the country, investment opportunities thanks to new local infrastructures)</p> <p>(F6) Getting political support</p>

Results from H1: Roles and limits produced by decentralization and factors to deal with them