



European Bank
for Reconstruction and Development

ASSESSMENT OF KEY POLICY, LEGAL AND INSTITUTIONAL MECHANISMS REQUIRED FOR THE DEVELOPMENT AND IMPLEMENTATION OF THE NATIONALLY DETERMINED CONTRIBUTIONS (NDCS)

Selected SEMED Countries





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About the Report

The EBRD, in cooperation with CISDL, the Lauterpacht Centre for International Law at the University of Cambridge, and McGill University, as well as in-country legal experts conducted a legal research project into legal measures for achievement of the nationally determined contributions in the selected jurisdictions. This outcome report is a by-product of this research project and is intended to inform policy-making moving forward.

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Foreword

The Paris Agreement, a groundbreaking climate initiative aimed at holding global temperature rise “well below 2°C”, has called on the world for action. Not only do international organisations play a role in this new era, but the Agreement has ushered in a new era of participation by individual countries through their nationally determined contributions (NDCs).

In light of these crucial elements of climate action, the EBRD Legal Transition Team has launched a legal study to assess progress, potential, and obstacles in realizing NDC success in selected countries. As this report illustrates, responsibility to work towards NDCs implementation extends beyond the public sector, and requires the full participation of the private sector as well. Recognition of the need for cooperation between these sectors in achieving climate adaptation and mitigation goals is not only a refreshing development, it is also essential for the success of international climate initiatives and building up the new international climate regime.

This report highlights the efforts made in Tunisia, Jordan, and Morocco to move forward the climate agenda, draws out challenges and barriers, and identifies legal measures which support climate change adaptation and mitigation. Lessons can undoubtedly be taken from this analysis to inform the work happening globally in this area.

Climate law and governance are inextricably linked. This report both addresses the legal, regulatory, and

institutional barriers to achieving NDCs and presents recommendations to address these barriers.

More importantly it highlights areas of opportunity for other countries struggling to identify the specific approaches needed to implement their NDCs. Avenues remain under-utilized by climate vulnerable jurisdictions. Studies such as this are highly informative as they elucidate the potential of what can be done in jurisdictions facing less climate pressures.

Deeper inquiry into legal approaches which support achievement of domestic NDCs assists in identification of barriers and areas of opportunity across jurisdictions. These insights are crucial for the achievement of the Paris Agreement and will work to inform the facultative dialogue under the Paris framework.

It is through the immense efforts of our dedicated legal experts and coordinators at the EBRD and a talented team of international legal scholars that this report has become a reality. We hope that this report marks the beginning of an important journey of private-public cooperation on the road to climate adaptation and mitigation.

Marie-Anne Birken

General Counsel at the European Bank for Reconstruction and Development (EBRD)

Executive Summary

The adoption of the Paris Agreement during the United Nations Framework Convention on Climate Change (UNFCCC) 21st Meeting of the Conference of the Parties in December 2015 represents a landmark of consensus among countries: a treaty that commits 197 States to reduce greenhouse gas emissions (GHGs) to prevent the most drastic effects of climate change. Under the Paris Agreement, countries must prepare comprehensive national action plans that commit to key mitigation, adaptation and other objectives, known as their Nationally Determined Contributions (NDCs).

“The success of the Paris Agreement depends on ambitious development and implementation of NDCs.”

The importance of NDCs to the success of the Paris Agreement cannot be overstated. It is countries' implementation of their NDCs, in the context of support to long-term low-carbon development pathways, that will achieve, or miss, the Paris Agreement target of well below 2°C global warming.

The legal status of NDCs, and how legal frameworks can help or hinder investment

The way in which the NDCs have been included in the Paris Agreement means that they are not legally binding in international law, in the sense that failure by a country to achieve or implement the commitments in its NDC would not put the country in breach of its treaty obligations. Nonetheless, once a country ratifies the Paris Agreement, its NDC becomes binding in the sense that it can only be revised if the revision is a progression beyond

the previous NDC. Each successive NDC should be drafted with a view to enhancing the level of ambition (known as the 'no backsliding' principle).

NDCs can be persuasive for initiation, guidance and interpretation of government policy and standards in the countries.

A key step in successful implementation of the NDCs is the incorporation of its commitments into binding domestic laws and governance systems. In many countries, regulatory regimes continue to privilege carbon-intensive, unsustainable options, rather than promoting sustainable development and making finance flows consistent with a pathway towards low-carbon and climate-resilient alternatives. Where such gaps remain between NDC ambition and what is established in current laws, legal amendments or reforms will be needed to create an enabling environment for private and public investments, as key contributions to the NDC targets. This report demonstrates that legal and institutional reforms by public agencies hold the potential to foster - or frustrate - private investment in the priority areas highlighted by the NDCs.

“A key step in successful implementation of the NDCs is the incorporation of its commitments into domestic legal and governance systems.”

It will take both public and private sector efforts to achieve the commitments set out in NDCs. For governments and the public sector, legal reform efforts can include levelling the playing field for greener products by phasing out antiquated subsidies, providing new incentives, strengthening market infrastructure and market-based mechanisms, and greening public

procurement. For the private sector, investment in greener products is essential to fill the gap between the action needed and the resources available to achieve it. As well as mobilizing greater financial resources, private sector efforts can include improving technical capabilities and the development of innovative technologies.

Legal challenges and innovations in NDC priority sectors in Jordan, Tunisia and Morocco

This report focuses on the NDCs of Jordan and Tunisia, with illustrative examples from Morocco. Jordan, Tunisia and Morocco's NDC priorities are all built upon existing government climate change aims, most of which already have some legal and institutional support. However, this research demonstrates that legal and institutional gaps remain, which act as barriers to achieving NDC objectives. By systematically reviewing the laws, regulations, policies and institutional mandates that are currently in place to support these countries' NDC priorities in key sectors (see Table A), this study shows where Jordan, Tunisia and Morocco must focus legal reform efforts, if they are to achieve their NDC objectives. The key priority sectors reviewed are renewable energy, energy efficiency, transportation, agriculture and land-use, and water.

Regarding **renewable energy**, all three countries have adopted specific legislation to incentivize the development of renewable energy sources. Both Morocco and Jordan's legal and institutional arrangements have led to ambitious projects reaching the construction phase. However, challenges remain for all three countries, including complicated technical and administrative licensing

processes; a lack of transparency (and therefore certainty) within government decision-making criteria for the selection of renewable energy projects and inefficient fossil fuel energy subsidies that maintain artificially low energy tariffs.

Success in the uptake of renewable energy in Jordan

Jordan follows Morocco to become a leader in the solar energy market in the region, as a result of innovative regulation made under its *Renewable Energy and Energy Efficiency Law of 2012* (as amended), and the decision to transition to competitive tenders. These governmental initiatives have resulted in significant investment proposals for the development of new solar energy facilities, such as the large-scale photovoltaic plant being developed with EBRD support at Mafraq in northern Jordan.

Energy efficiency laws across Jordan, Tunisia and Morocco focus on the reduction of energy consumption in construction, transport and industry. Energy performance certificates for buildings, appliances, etc. are an important tool to provide consumers with information on the energy efficiency of buildings and products. However, a lack of public knowledge of the benefits of improved energy efficiency compounded by a lack of know how in some parts of the construction industry, and a lack of awareness of financial incentives on the part of investors provide systemic limitations. Demand side innovations to improve the uptake of energy efficient products and practices could be introduced to all three countries' legal frameworks, including information campaigns for owners and tenants, the introduction of smart meters and informative billing practices on energy

usage, which can help build awareness among energy consumers

Developing energy efficiency labelling and standards in Morocco

The Moroccan National Agency for the Development of Renewable Energy and Energy Efficiency is working in cooperation with EBRD to achieve best practice in energy efficiency standards and labelling policies, regulations and programmes that support increased investment in energy efficient technologies.

Regarding **agriculture and land-use**, legal frameworks across the countries focus on integrated land-use planning and monitoring to reduce pressure on land from agriculture and increase forest cover. However, lack of inter-Ministerial coordination is the primary challenge to comprehensive, integrated landscape-level management plans for sustainable land development.

New investment Law in Tunisia

Tunisia's new Investment Law of 30 September 2016 promotes investments aimed at achieving sustainable development in light of national priorities (Article 1) and establishes a sustainability premium for investments contributing to the fight against pollution and for environmental protection. It also simplifies procedures and provides a reassuring and encouraging governance structure for investors. Moreover, despite some weaknesses in drafting, the new Investment Law has the potential to contribute towards improved government coordination in relation to NDC objectives.

Water resources are central to concerns about climate change in all

three focus countries, with all three facing water scarcity issues. Legal frameworks focus on measures to achieve integrated water management, such as rationalizing the use of water and modernizing distribution networks, to reduce waste. Plugging gaps in water management policies and strong enforcement are the key challenges to ensuring that water management laws are effective and that water is stringently controlled.

Regarding **transportation**, which is only reviewed in Jordan, laws focus on public transport and the deployment of infrastructure to support a renewable energy powered, zero emissions fleet. Random and fragmented urbanization, unguided by comprehensive planning, provide the main barriers to Jordan's ability to achieve its target to develop its public transportation sector.

Transparency, capacity and engagement (across departments and society) are key for legal reforms to incentivize private investments

Although each country has specific challenges and innovations within its laws and institutional framework, a number of institutional challenges can be said to broadly exist across all three countries. These are a lack of transparency regarding climate change mitigation and adaptation data, limited financial and (in some cases) technical capacity and limited cross-Ministerial and public engagement in climate change mitigation and adaptation measures. For private investors, transparency in decision-making, capacity to provide public support to investments and societal buy-in are vital enablers.

As well as working towards their NDC adaptation and mitigation objectives,

the other key pillars of NDC implementation are monitoring, reporting and verification obligations (MVR) that align with the Paris Rulebook. Transparent climate governance systems that track the implementation and impact of climate change policies feed back into the achievement of the adaptation and mitigation objectives, because they enable progress to be measured, and crucially help to provide the signals needed to attract financial flows. All three countries have committed to put in place a functioning MRV system, including a GHG inventory to track mitigation progress, both on a macro level and on (coordinated) sectoral and activity levels.

Specific recommendations can be offered

It is essential that the momentum generated with the adoption of the Paris Agreement is capitalized upon. NDCs should provide the impetus and inspiration for the introduction of enhanced ambition in climate mitigation and adaptation measures. For these measures to be successful, a strong legal framework is required.

“Countries will need to fill legal gaps and strengthen inconsistencies in their legal frameworks and institutional mandates before they will enable effective NDC implementation.”

In the reports’ country analyses, sector-specific barriers and opportunities for achievement of NDC priorities in Jordan, Tunisia and Morocco are indicated, with the aim of providing specific directions for further reform in all three countries.

Legal policy and institutional reforms help stimulate investment in climate projects, which assists at the national

level in a number of ways, including to increase climate resilience and achieve NDC goals, and at the global level to achieve the objective of the Paris Agreement of less than 2°C global warming.

Multilateral peer review is also a driver for implementation, and is built into the Paris Agreement. By showcasing reforms and lessons learned from these three countries, this report aims to act as a catalyst for similar legal and regulatory changes in neighbouring countries.

For more information please visit: <http://www.climatelawgovernance.org/>.

Table A: Jordan, Tunisia and Morocco's NDC objectives across select priority sectors

Priority areas	Jordan's NDC objectives	Tunisia's NDC objectives	Morocco's NDC objectives
Renewable energy	To increase renewable energy from 2% of overall energy in 2013 to 10% in 2020	To increase use of renewables from 4% in 2015 to 30% in 2030	To reach over 52% of installed electricity production capacity from renewable sources by 2030
Energy efficiency	To improve energy efficiency by 20% by 2020	To promote energy efficiency in all sectors to decrease primary energy demand by 30% by 2030	To reduce energy consumption by 15% by 2030
Agriculture and land-use	To improve the agricultural sector's contributions to adaptation	To improve the agricultural sector's contributions to mitigation and adaptation	To afforest 50,000 ha of land/year
Water	To adopt adaptation measures and programs for the water sector	Implement water resources adaptation projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres	
Transportation	To improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet		

Introduction

The adoption of the Paris Agreement during the United Nations Framework Convention on Climate Change (“UNFCCC”)¹ 21st Meeting of the Conference of the Parties (“CoP 21”) in December 2015 (the “Paris Agreement”), represents a landmark of consensus among countries: a treaty that commits 197 States to reduce greenhouse gas emissions (GHGs) to prevent the most drastic effects of climate change. The Paris Agreement is a universal instrument, signed by a record number of countries, and entered into force less than a year later in November 2016. The global objective set out in the Paris Agreement includes limiting global warming to “well below 2°C” above pre-industrial levels and “pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”.

Prior to and during CoP 21, countries submitted comprehensive national action plans committing to key mitigation, adaptation and other objectives, known as their ‘intended nationally determined contributions’, or (i)NDCs. The (i)NDCs submitted by the Parties to date differ in their substance and format. Some countries, like Morocco, have incorporated specific targets in their (i)NDCs, while others do not include economy-wide targets or clear commitments. The (i)NDCs become nationally determined contributions (“NDCs”) once a Party ratifies the Paris Agreement, although a Party may choose to submit an NDC that is different to its (i)NDC.² For the purposes of this report, the term NDC will be used to refer to both (i)NDC and NDC.

The importance of NDCs to the success of the Paris Agreement cannot be overstated. It is countries’ implementation of their NDCs, in the context of support to long-term low-carbon development pathways, that will achieve, or miss, the Paris Agreement target of well below 2°C global warming. Thus, the success of the Paris Agreement depends on ambitious development and implementation of NDCs. A key step in successful implementation is the incorporation of NDC commitments and measures into domestic legal and governance systems.

This report contains initial ‘pilot study’ analysis of the legal status of NDCs within the legal and governance systems of two selected case study countries, Tunisia and Jordan, with illustrative examples from Morocco. It looks at the legal, regulatory and institutional measures that each country is undertaking to achieve NDC targets and commitments, focusing on priority measures and sectors, specifically energy, transport, water and land use (agriculture and forestry).

The overall aims of the study are twofold:

- (i) to identify legal, institutional, financial, sectoral and cross-sectoral barriers to achieving NDC targets in domestic legal and governance systems, and
- (ii) to make recommendations on how to address these barriers.

¹ Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1.

² Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1, para 22

An important context for this report is the key role that both the public and the private sector play in achieving the commitments set out in NDCs. For governments and the public sector, efforts can include levelling the playing field for greener products by phasing out antiquated subsidies, reforming policies and providing new incentives, strengthening market infrastructure and market-based mechanisms, redirecting public investment and greening public procurement.

Investment by the private sector is essential to fill the gap between the action needed and the resources available to achieve them. As noted by the World Resources Institute “while developed countries, through international agreements, have committed to channelling \$100 billion by 2020 to developing countries for their climate mitigation and adaptation activities, this level of investment is clearly far from what is required. Recognizing this funding gap, public actors have become increasingly interested in using public funds to leverage private capital investment in climate change projects in developing countries”.³

In addition to mobilising greater financial resources, private sector involvement can also lead to improved technical capabilities, the development of innovative technologies, greater community engagement and can strengthen the long-term viability of low-carbon markets.⁴ The opportunities for, and barriers to, private sector involvement have been considered in this report and many of the suggestions made are intended to facilitate private investment.

Methodology and structure of the report

The report was undertaken for the European Bank for Reconstruction and Development (EBRD) and under EBRD guidance by national legal experts from leading universities in Tunisia, Jordan and Morocco, with support from international legal researchers, and focuses on:

- the Paris Agreement and related international UNFCCC frameworks within the context of CoP21 and CoP22,
- the three target countries’ NDCs,
- the three target countries’ climate change strategies, policies and initiatives on a national and priority sector level,
- the three target countries’ existing, forthcoming and planned primary and secondary legislation and financing activities related to climate change adaptation and mitigation policies and measures, as well as investment initiatives, and
- the three target countries’ institutional arrangements and intragovernmental coordination, such as, for example, the existence of an interdepartmental climate change committee and its role in policy formulation and implementation.

The report has been verified through consultation with key stakeholders involved in the Paris Agreement at the international level and presentations in international events during the 2016 UNFCCC CoP22 in Marrakech and during the Global Forum on Law, Justice and Development 2016 in

³ World Resources Institute, ‘Climate Finance’ <http://www.wri.org/our-work/project/climate-finance/climate-finance-and-private-sector>

⁴ Alan Miller (2014) ‘Why We Must Engage the Private Sector in Climate Change Adaptation Efforts’ World Bank

<http://blogs.worldbank.org/climatechange/why-we-must-engage-private-sector-climate-change-adaptation-efforts>; World Resources Institute, ‘Climate Finance’ <http://www.wri.org/our-work/project/climate-finance/climate-finance-and-private-sector>

Washington DC. Certain considerations are also based on EBRD investment plans for the selected countries to, if feasible, ensure that the research, analysis and recommendations provide the necessary level of detail to facilitate/inform such plans.

Following this introduction is a review of the legal and policy implications of the Paris Agreement, including an introduction to the different types of legal mechanisms for mitigation and adaptation. There then follows a country analysis for Jordan and Tunisia, with selected thoughts on Morocco, which includes:

- Paris Agreement ratification and NDC progress
- an overview of the relevant national legislation, institutional framework and investment plans related to the targeted NDC provisions, including the establishment of continuous monitoring systems and consultation processes, and
- an analysis of the legal, regulatory, institutional and financial barriers, which constrain achievements of NDCs key mitigation and adaptation objectives.

The report concludes by identifying cross-cutting barriers to achieving NDC targets and recommendations on key legal, institutional and financial mechanisms for overcoming these

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barriers and for leveraging a substantial upscaling of climate action. It also includes recommendations for multi-stakeholder measures to secure more coherent coordination of policy and legal instruments for climate mitigation and adaptation across key economic sectors.

In as much as it is possible, research may focus further on an analysis and recommendations on response measures and on the recourse routes to investors acting and relying upon countries' policy ambitions and NDC provisions within the relevant national legal and institutional frameworks. This could include the types of remedies that should be available to ensure a favourable investment climate. It may also include recommendations on implementation roadmaps, highlighting possible mechanisms and measures at sector and sub-sector level, policy changes and regulatory reforms, institutional capacity and investment needs.



Photovoltaic Micro-plants by Isofoton (Morocco) – CC3 license.

This section briefly considers the national legal implications of the entry into force of the Paris Agreement.

Specifically, it comments on the legal status under the Paris Agreement of these three countries' NDCs, and introduces the principal measures for implementation of mitigation and adaptation measures identified in these

countries' NDCs. The review highlights the need for low-carbon investment and for financial flows to support sustainable development.

Implications of the Paris Agreement on Climate Change for National Legal and Institutional Reform

The Paris Agreement was adopted under the 1992 UNFCCC, which guides global efforts to avoid the dangers of climate change.⁵ States party to the UNFCCC commit, at Article 2, “to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty” including by, at 2.1(c) “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”⁶

While the UNFCCC itself does not contain binding GHG emission limits or enforcement mechanisms, it does provide a framework for the negotiation of further protocols and instruments. The first international instrument to include GHG emission limits was the 1997 Kyoto Protocol,⁷ which includes binding emissions reduction targets for Parties, determined centrally in the Protocol.⁸ Its first commitment period ended in 2012, and a second commitment period, known as the Doha Amendment, runs to 2020.⁹ However,

only 37 countries accepted binding targets under the second commitment period of the Kyoto Protocol. In this context, after many years of UNFCCC negotiations, the Paris Agreement was adopted by the CoP21 on 12 December 2015.¹⁰

As mentioned in the introduction, the main vehicle for GHG emission limits and subsequent reductions in the Paris Agreement is comprehensive national action plans: ‘nationally determined contributions’, or NDCs. Parties’ NDCs represent the emissions reductions and other actions that each country will contribute to global efforts to respond to climate change. Thus, the success of the Paris Agreement depends on ambitious development and implementation of NDCs. In other words, countries’ GHG emission reduction commitments in their NDCs should cumulatively achieve the Paris Agreement target of well below 2°C global warming.

The way in which the NDCs have been included in the Paris Agreement means that they are not legally binding in international law, in the sense that failure by a country to achieve or implement the commitments in its NDC would not put the country in breach of its treaty obligations.¹¹ Instead, the legally-binding elements of the Agreement are procedural rather than substantive. For example, to prepare, communicate and maintain successive NDCs, every five years, and to regularly

⁵ United Nations Framework Convention on Climate Change (adopted 9 May 1992, opened for signature 4 June 1992, entered into force 21 March 1994) 1771 UNTS 107 (UNFCCC).

⁶ Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1.

⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change (adopted 11 December 1997, entered into force 16 February 2005) 2303 UNTS 148 (Kyoto Protocol).

⁸ S Maljean-Dubois and P Sariago, (2014) ‘Le Principe des Responsabilités Communes Mais Différenciées dans le Régime International du Climat’ 55 Les Cahiers de droit 112.

⁹ In accordance with Articles 20 and 21 of the Kyoto Protocol, ratification by 75% of the Parties present and voting at the meeting is necessary for the Doha Amendment to come into force (144 Parties), which has not yet materialised.

¹⁰ Conference on the Adoption of the Paris Agreement (opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1 (12 December 2015).

¹¹ Bodansky, D. (2016) ‘The Legal Character of the Paris Agreement’ RECIEL 25(2) 142 and Cordonier Segger, M.C. (2016) ‘Advancing the Paris Agreement on Climate Change for Sustainable Development’ Vol 15 CJICL.

provide a national GHG inventory and the information necessary to track progress in implementing and achieving its NDC.¹²

Nonetheless, once a country ratifies the Paris Agreement, its NDC becomes binding in the sense that it can only be revised, if the revision is a progression beyond the previous NDC. Further, a successive NDC shall be drafted with “a view to enhancing level of ambitions” (i.e. the “no backsliding” principle).¹³ The laws which help to deliver on the NDC, such as those documented in this report, however, are binding. Where gaps remain between NDC ambition and what is established in the law, legal amendments or reforms may be needed to create an enabling environment for private and public investments as key contributions to the NDC targets.

Based on a synthesis report that aggregated (i)NDC pledges, current projections for average global temperature rise by the end of the century place global warming well above the 1.5° - 2°C limit necessary to avoid dangerous climate change.¹⁴ The first global stocktaking of NDCs is expected in 2023, and will then take place every five years, to inform Parties on whether their NDC pledges are sufficient to meet the Paris Agreement target. The stocktaking process seeks to help drive the review and preparation of the NDCs, to include *inter alia* revision of NDCs and ambition levels, implementation and investment plans,

capacity and institution building, and preparation of decarbonisation plans.

The Paris Agreement also includes a series of cooperative frameworks and mechanisms, each of which establishes different legal rights and obligations for Parties, and explicitly makes provision for the needs of developing country Parties, especially the most vulnerable. It is largely agreed by the international community that the need for a coherent and coordinated bottom-up approach is more relevant than ever in order to translate international prescription into practice.¹⁵ (For further details on the Paris Agreement, see Annex II of this Report.)

Nationally Determined Contributions & Policy and Legal Mechanisms

Legal Reform and Nationally Determined Contributions: NDCs provide countries with clear targets for climate change mitigation and adaptation. However, to turn these targets into action, new laws or legislative reforms will often be needed.

As of September 2016, out of 187 countries with NDCs published online by the UNFCCC registry, 156 countries explicitly prioritize an intention to undertake legal and institutional reforms. Further, over 120 countries are calling for support from the international community in their NDCs, with 51 stressing specifically the need for legal and institutional capacity building.¹⁶

¹² Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1., Articles 4.2 and 13.7(b).

¹³ Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016) UN Doc FCCC/CP/2015/L.9/Rev.1., Article 4.3: “Each Party’s successive nationally determined contribution will represent a progression beyond the Party’s then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances” and Article 4.11.

¹⁴ UNFCCC Secretariat ‘Synthesis report on the aggregate effect of the intended nationally determined contributions.’ FCCC/CP/2015/7, 30 October 2015.

¹⁵ A Delfino (2016) “Moving Beyond by Incentivising Green Investment in EBRD’s Countries of Operation” Climate Law and Governance Working Paper Series, p 2.

¹⁶ MC Cordonier-Segger, A Scott and M Reiner (2016) ‘156 Countries stress importance of legal and institutional reforms in (i)NDCs, with 51 calling for law and governance capacity building’ Climate Law and Governance Initiative <http://www.climatelawgovernance.org/knowledge-centre.html>.

This call is unsurprising. Key aspects of the Paris Agreement respond to international legal obligations and are very likely to require domestic legislation for effective implementation.

Parties can implement changes across various sectors of public policy to reduce GHG emissions, to support the development of carbon sinks and reservoirs (including forests), and to institute processes for collection, compilation and verification of information. In many cases, this requires domestic legislation in natural resource sectors (such as energy, forests, water and land), in key infrastructure and economic sectors (transportation, waste, agriculture, construction, finance, industry, trade), in overarching sectors (environment, health and management), and in adaptation areas (disaster risk reduction, resilience and natural disaster response). Moreover, updates to institutional mandates may be required, in addition to regulatory and budgetary review, to ensure clear responsibility for achieving climate change goals.

The following paragraphs introduce measures that could be taken to implement the mitigation, adaptation and resilience, loss and damage, climate finance and monitoring, reporting and verification measures envisaged in the international climate change framework. Because of the importance of the private sector, this introduction highlights the legal reforms and measures that could be implemented with an aim to incentivise green investment.

GHG emission reduction and carbon sinks

Mitigation Mechanisms: The Sustainable Development Mechanism (SDM)¹⁷ and Reducing Emissions from Deforestation and Forest Degradation (REDD+) are examples of mechanisms to assist with mitigation of GHG emissions, included in the international climate change legal framework. Implementation of these mechanisms may require changes to legislative frameworks, related institutional mandates, and new policies. For example, in bringing the regulation of various sectors into harmony; clarifying land tenure to support the establishment of REDD+; or guiding the mandates and operations of the designated national authorities for the SDM (which is also intended to support adaptation action).

Incentives for Mitigation Technologies: Governments may implement incentives to leverage the uptake of mitigation technologies by companies. At the economy-wide level, this may include introducing cap and trade, carbon taxes or hybrid systems and by transparent and predictable policies. The removal of perverse subsidies may also be key to sending appropriate financial signals to private sector investors. Subsidy removal often requires legal reforms, as well as changes to guidelines, financial regulations, and institutional mandates at national and even municipal levels. The Technology Mechanism, which comprises the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN), facilitates technology transfer between developed to developing countries. This support is key to

¹⁷ Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1., Article 6.4.

developing countries achieving their mitigation goals, alongside financial and capacity building support.

Adaptation and Resilience

Disaster Risk Reduction: Disaster Risk Reduction (DRR) planning at the national level can be integrated with climate adaptation planning, in line with the Sendai Framework for Disaster Risk Reduction. This requires changes to existing adaptation strategies and disaster risk reduction programs, as well as related laws, policies and institutions.

Disaster Response / Internal Climate Migration and Displacement: In addition to DRR planning, a national legal framework for disaster response may be needed to assist those who are impacted by both slow- and rapid-onset climate disasters, including those internally displaced by climate change. This may require the adoption of new laws and the establishment of new institutions, or the adaptation of existing frameworks. It may also require legal training and reforms to permit specialised agencies, police forces and others involved in response to update their procedures and guidelines. The Warsaw International Mechanism for loss and damage has been created to support countries in their implementation of approaches to address loss and damage.¹⁸

Incentives for Adaptation Technologies: As with mitigation technologies, the development and implementation of adaptation technologies (for example, to prevent coastal erosion and flooding) can be incentivised domestically and internationally. This may require

changes to financial legislation, programs and the mandates of institutions charged with the promotion of new research, development and technological transfers, as well as tax codes, investment codes and related legislation or guidelines. The technical examination process on adaptation that is taking place from 2016 to 2020, aims to identify concrete opportunities for strengthening resilience, reducing vulnerabilities, and increasing the understanding and implementation of adaptation actions.

Legal Rules of Adaptation Funds: Adaptation funds (such as the Adaptation Fund,¹⁹ the Global Environment Facility Trust Fund, the Green Climate Fund and others) may require clear legal rules governing transparency, accountability, and effectiveness, and incorporating safeguards for human rights, the environment and other priorities.

Loss and Damage

Loss and Damage: Legal approaches to address loss and damage for slow- and rapid-onset climate disasters, including rules governing investment in early warning systems, pooling of risk, and insurance mechanisms among other measures, can be explored and piloted, informing global efforts to implement the Warsaw International Mechanism. This may require legal and institutional reforms to guide the institution of new regimes to address climate insurance, compensation, and claims, among other measures.

Climate Finance

Laws Governing Finance: Climate finance depends on predictability and

¹⁸ Report of the Conference of the Parties on its nineteenth session, held in Warsaw from 11 to 23 November 2013. FCCC/CP/2013/10/Add.1

¹⁹ Marrakesh Conference of the Parties serving as the first meeting of the parties, Decision CMA 1 "The Adaptation Fund should serve the Paris Agreement, following and

consistent with decisions to be taken at CMA1-3 (COP24/CMP14) that address the governance and institutional arrangements, safeguards and operating modalities of the Adaptation Fund". COP 22/CMP 12/CMA 1

sustainability. In addition, full transparency in the way that financial resources are allocated and used for mitigation and adaptation activities is crucial. To this end, legal and institutional reforms to ensure effective and efficient legislative frameworks, rules, procedures and systems may be important to secure the transparency and accountability of climate finance. Moreover, laws will be important to support private sector investment in climate change projects, including transparent public-private partnership arrangements.

Laws Governing Incentives, Including Subsidies: Certain agricultural and industrial subsidies (for example, in the areas of fossil fuels, GHG emissions-intensive mining and transportation) may need to be eliminated, while new incentive policies may be created (including for renewable energy and clean technology) at the national level to stimulate a shift towards sustainable practices and in accordance with international trade rules.²⁰

Laws Governing Financial Disclosure: Climate-related risks for the business sector include stranded assets. This refers to the fossil fuel related ‘assets’ that companies will not be able to use, as a goal of global warming well below 2°C does not allow the burning of significant amounts of existing fossil fuel reserves. Therefore, these assets become ‘stranded’ and fossil fuel companies and their investors risk considerable losses. For this reason, international bodies like the Financial Stability Board are encouraging regulations that require companies, investors, hedge funds and banks,

among other organisations, to disclose climate change-related risks.

Transparency, Accountability and Monitoring, Reporting and Verification (MRV)

Transparency, Communication, Peer Review & Global Stocktake: Necessary elements of transparency, including collection of national communications and related data, and ensuring its public availability, are key for the successful implementation of the Paris Agreement, due to its ‘bottom up’ design. Transparency is key to building trust among countries that everyone takes action. The Paris Agreement has established an enhanced transparency framework for action and support through several elements providing flexibility to developing countries that need it, in light of their capacities, while recognizing the special circumstances of the least developed countries and the small island developing states. These elements include:

- Universal and harmonized monitoring, reporting and verification requirements, including the submission of national GHG emission inventories and reports on progress towards NDCs on a biennial basis, and
- A commitment to enhance transparency over time

In addition, new rules, laws, institutions and guidelines or standards need to be adopted at national levels – to ensure national compliance with common processes for data collection, and internationally. At the international level, the Parties to the Paris Agreement are developing common

²⁰ T Cottier and others (eds) (2009) *International Trade Regulation and the Mitigation of Climate Change: World Trade Forum* (CUP); R Cottier (2014) ‘The Potential of Tariff Policy for Climate Change Mitigation: Legal and Economic Analysis’ 48 *JWT* 1007; T Cottier and K Holzer (2015) ‘Addressing climate change under preferential

trade agreements: Towards alignment of carbon standards under the Transatlantic Trade and Investment Partnership’ 35 *Global Environmental Change* 514; T Cottier (2014) ‘Renewable Energy and WTO Law: More Policy Space or Enhanced Disciplines?’ 5 *RELP* 40.

modalities, procedures and guidelines to operationalize the Paris Agreement's provisions mentioned above. These include the rules that will be used to monitor progress toward the Agreement's goals during the Global Stocktake, principles for accounting of emissions and sinks, and a transparency framework to track how countries are progressing on their commitments, including common rules, procedures and guidelines to enhance the UNFCCC's current MRV system.

In addition, the Capacity Building Initiative for Transparency (CBIT) trust fund managed by the GEF has been established under the Agreement to help countries in their efforts to build institutional and technical capacity for meeting enhanced transparency of action and support needs, and successfully raised more than USD 50 million in pledges ahead of CoP 22.

Social and Environmental Impact Assessments: New requirements for social and environmental impact assessments may be needed for new projects and policies relating to agriculture, infrastructure, transportation, industry, energy and natural resources, vis-à-vis their potential climate-related impacts. Such rules may also need to be adapted to apply to climate change mitigation and adaptation projects (for example, CDM or REDD+) to minimise any negative human rights, social and environmental effects.

Human Rights & Equity

Respect for Human Rights: Following the Cancun Agreements, which recognised the importance of respecting human rights in all climate-related actions, the Paris Agreement also contains several references to respect for human rights. Human rights considerations – arising from the effects of climate change itself, as well as from Parties' climate change response measures – shall be considered at the national level. The Human Rights Council has recently reaffirmed the importance of respect for human rights in the efforts to address climate change, building on previous statements to the same effect.²¹ In addition, as observed by the Office of the United Nations High Commissioner for Human Rights, respect for the right to public participation and access to information are guaranteed under international human rights law and, along with other fundamental rights, are critical to the success of efforts to address climate change.²²

Recognition of Indigenous Peoples' Rights, including FPIC: The Paris Agreement explicitly affirms that climate response measures should recognise the specific rights of Indigenous peoples, as affirmed in the UN Declaration on the Rights of Indigenous Peoples²³ and other binding international human rights treaties.²⁴ Indigenous peoples can be included in participatory processes relating to climate change, particularly when it comes to integrating traditional

²¹ UNHRC Draft Res (30 June 2015) UN Doc A/HRC/29/L.21; UNHRC Res 7/23 (14 July 2008) UN Doc A/HRC/7/78; UNHRC Res 10/4 (12 May 2009) UN Doc A/HRC/10/L.11.

²² OHCHR (15 January 2009) UN Doc A/HRC/10/61, para 78-79. See also OHCHR (2011) UN Doc A/HRC/19/34. See also S Atapattu, (2009) 'Climate Change, Human Rights and Forced Migration: Implications for International Law' 27 Wis Int'l LJ 607; S Atapattu (2008) 'Global Climate Change: Can Human Rights (and Human Beings) Survive this Onslaught?' 20 Colo J Int Environ Law Policy 35.

²³ UNGA Res 61/295 UN Declaration on the Rights of Indigenous Peoples (13 September 2007) U.N. Doc. A/61/PV.107.

²⁴ Paris Agreement, (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1), Preamble and Article 7.5.

knowledge on mitigation and adaptation into national approaches.²⁵ The principle of free, prior and informed consent (FPIC) may also be applicable in climate-related projects that affect the lands of Indigenous peoples, and the traditional knowledge of Indigenous peoples and local communities must be considered in climate actions at the domestic level.

Climate Justice: As the Office of the United Nations High Commissioner for Human Rights has noted, the “effects of climate change will be felt most acutely by those segments of the population who are already in vulnerable situations due to factors such as poverty, gender, age, minority status, and disability.”²⁶ Parties can adopt new measures to mainstream consideration for the right to non-discrimination of historically-vulnerable groups across their climate policies and climate-related legislation, and take the necessary affirmative actions to ensure that climate change harms and climate response measures do not impact on substantive equality.

Climate Disputes, Arbitration and Litigation Strategies: Building on the *Urgenda* decision in the Dutch Courts and other current litigation,²⁷ as well as recent legal scholarship on the potential for Climate Compensation Acts to be adopted at national and local levels in key jurisdictions,²⁸ it is likely that climate-related disputes will continue to be advanced through courts and tribunals at domestic and international

levels. Legislation relating to liability, response action and compensation for loss and damage due to climate change – including with regards to health, property, infrastructure, and industry – may be needed at the domestic level, in addition to provisions for related issues such as climate-induced displacement and migration. The facilitation of access to justice, to existing judicial mechanisms or the establishment of new claims processes or tribunals may be required, along with good governance assurances in compensation mechanisms.²⁹



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In this challenging context of national legal and institutional reform in relation to climate change, the following section undertakes a review of Jordan and Tunisia as case studies for an examination of the current state of legal and institutional frameworks to support new investments in the priority areas signalled in their NDCs, with illustrative examples from Morocco.

²⁵ Decision adopting the Paris Agreement, ‘V. Non-Party Stakeholders’, para 135: “Recognizes the need to strengthen knowledge, technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change, and establishes a platform for the exchange of experiences and sharing of best practices on mitigation and adaptation in a holistic and integrated manner”

²⁶ OHCHR (15 January 2009) UN Doc A/HRC/10/61, para. 42.

²⁷ K Purnhagen (2015) ‘Climate law: Dutch Decision Raises Bar’ 523 Nature 410. For a further overview of (ongoing) climate actions against governments and companies in different jurisdictions see the report by K Boom and others (2016) ‘Climate Justice: The

international momentum towards climate litigation’ <http://climatejustice.org.au/wp-content/uploads/2016/06/Report-Climate-Justice-2016.pdf>.

²⁸ A Gage and M Wewerinke (2015) ‘Taking Climate Justice into our own Hands, and the Climate Compensation Act’ (*WCEL/VELA*)

²⁹ See S Atapattu, ‘Climate Change, Differentiated Responsibilities and State Responsibility: Devising Novel Legal Strategies for Damage Caused by Climate Change’ in B. Richardson and others (eds) (2009) *Climate Law And Developing Countries: Legal and Policy Challenges For The World Economy* (EEP) and C Voigt (2008) ‘State Responsibility for Climate Change Damages’ 77 Nordic J Int’l L 1.

Legal and Institutional Frameworks Enabling NDC Implementation in Tunisia and Jordan, with Illustrative Examples from Morocco

This section describes the legal status of NDCs in Jordan, Tunisia and Morocco to demonstrate the purpose and utility of these documents for national climate change legal reform. It presents a table summarising the findings from pilot national case studies in Jordan and Tunisia, informed by initial illustrative examples from Morocco, on emission reductions ambition levels, priority targets, mitigation and adaptation priorities and financial flow demands; discusses legal and institutional enablers for the implementation of the NDCs in Jordan and Tunisia; and offers examples of legal and institutional support for Morocco's NDC.

By focusing on the legal and institutional frameworks which may provide incentives, greater legal stability, and other enabling conditions for private investment, this section demonstrates that legal and institutional reforms hold the potential to foster or frustrate private financial flows in areas highlighted by the NDCs of the countries. It also suggests areas for further research or legal and institutional reform.

The Legal Status of NDCs in Jordan, Tunisia and Morocco

The legal status of the NDCs of Jordan, Tunisia and Morocco are similar across

all three countries. First, all three countries have signed and ratified the Paris Agreement. Upon ratification and entry into force of the Paris Agreement, the treaty becomes part of the law of the countries, in accordance with their constitutional structures and frameworks. Upon ratification of the Paris Agreement, the (i)NDCs also become NDCs under the Paris Agreement. It is important to note that countries may update their (i)NDCs before they become NDCs. Morocco, for example, submitted an amended, enhanced NDC upon its ratification of the Agreement. Upon ratification, the NDC becomes binding in the sense that it can only be revised, if the revision is a progression beyond the previous NDC.

While the NDCs that are submitted to the UNFCCC Secretariat under the Paris Agreement have little formal legally-binding force within the countries, they are nonetheless significant. The NDCs are persuasive for initiation, guidance and interpretation of government policy and standards.³⁰ As unilateral international declarations of policy, these NDCs reflect major developments in climate change policy and may guide governments, private financial and other institutions' investments.

³⁰ See M Hoffmann (2011) *Climate Governance at the Crossroads: Experimenting with a Global Response after Kyoto* (Oxford University Press); H Bulkeley and others (2014) *Transnational Climate Change Governance* (CUP) and MC Cordonier-Segger (2016 fc) "Sustainable Development through the Paris Agreement on Climate

Change" *Camb Journal Intl Comp Law*, on the role of non-binding international commitments, whether unilateral declarations or otherwise, in driving ambition on the international stage and shaping both national policy and the evolution of international law.

Further, specific commitments found within the NDCs also represent binding laws, regulations and by-laws within Jordan, Tunisia and Morocco’s legal frameworks, supported by formal institutional mandates. Where this is the case, the binding laws, regulations and standards apply to encourage investments, and are being implemented, to varying degrees, within the countries.

While monitoring of compliance, enforcement and other aspects of implementation is not as strong as many might hope in any of the three pilot case study countries,³¹ the institutional arrangements being set in place to assist in transparency and other reporting obligations under the Paris Agreement may, nonetheless, be helpful to further enhance and elaborate the legal regimes supporting the achievement of the NDCs for each country.³²



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Table: Comparative analysis of the NDCs of Jordan, Tunisia and Morocco

Jordan

Emission reduction ambition level	Priority targets	Mitigation priorities	Adaptation priorities	Financial flow demands
12.5% below business as usual (BAU)	(i) <i>RE</i> : to increase RE to 10% in 2020 (ii) <i>energy efficiency</i> : to improve by 20% by 2020 (iii) <i>waste</i> : to reduce percentage of solid waste that is disposed of in landfills from 80% to 60% in 2025 and increase percentage of	(i) encourage development of renewable energies; (ii) rationalize energy consumption in all sectors and improve energy efficiency (iii) increase use of ‘zero emission’ public transport (iv) reduce disposal of solid	(i) access to improved water supply sources (groundwater protection, surface water development, demand management, water resources monitoring system) (ii) to set and implement a sustainable agricultural policy	USD 5.7 billion (of which USD 5.2 billion should come from international financing)

³¹ Implementing and facilitating compliance with international commitments can provide essential support to assist countries in meeting their obligations. For further information on monitoring of compliance, enforcement and implementation, see, *inter alia*, International Network for Environmental Compliance & Enforcement, <https://www.inece.org/>.

³² For an overview of the transparency obligations in the Paris Agreement, see C Campbell-Deruffe (2016) ‘Commitments by Developing Country Parties under the Paris Agreement’ (Briefing paper 2, Lawyers Responding to Climate Change).

	<p>treated and re-used solid waste from 20% to 40% in 2025</p> <p>(iv) <i>land use</i>: to improve the agricultural sector's contributions to adaptation (address production losses, water scarcity and climate change crop vulnerability) and afforest 25% of barren forest areas in the rain belt areas</p> <p>(v) <i>water</i>: to adopt adaptation measures and programs (saving/monitoring technologies) for the water sector (irrigation, water quality/pricing, desalination)</p> <p>(vi) <i>transport</i>: to improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet</p>	<p>waste and treat and re-use waste</p> <p>(v) afforest 25% of barren forest areas in the rain belt areas</p>		
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Tunisia

Emission reduction ambition level	Priority targets	Mitigation priorities	Adaptation priorities	Financial flow demands
Lower carbon intensity by 41% by 2030 relative to the base year 2010	<p>(i) <i>RE</i>: to increase the share of renewable energy in the electricity grid to 30% in 2030</p> <p>ii) <i>energy efficiency</i>: to reduce primary energy demand by 30% by 2030</p> <p>(iii) <i>land use</i>: to improve the agricultural</p>	<p>(i) promote renewable energy</p> <p>(ii) improve energy efficiency in all sectors</p> <p>(iii) changes in Agriculture, Forestry and Other Land Use (AFOLU) to improve carbon sink capacities</p> <p>(iv) water/ waste management,</p>	<p>(i) <i>water resources</i>: to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres</p> <p>(ii) <i>coastline</i>: to rehabilitate coasts and prevent coastal erosion</p>	<p>USD 17.5 billion (of which nearly USD 16 billion should come from international financing)</p>

	sector's contributions to mitigation and adaptation by, inter alia, intensifying the CO ₂ absorption capacities and promote biological agriculture (iv) <i>water</i> : to implement water resources adaptation projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres (v) <i>coastlines</i> : to rehabilitate coasts and prevent erosion	which includes GHG emissions reductions through reforms to water resources management, manufacturing waste and transport.	(iii) <i>agriculture</i> : capacity - building and institutional development measures in the agricultural sector (iv) <i>ecosystems</i> : rehabilitation, conservation and management of protected areas	
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Morocco

Emission reduction ambition level	Priority targets	Mitigation priorities	Adaptation priorities	Financial flow demands
42% below BAU by 2030	(i) <i>RE</i> : over 52% of installed electricity production capacity from renewable sources by 2030 (ii) <i>energy efficiency</i> : to reduce energy consumption by 15 % by 2030 (iii) <i>land use</i> : to afforest 50,000ha of land/year and to afforest 600,000ha by 2030 (iv) <i>agriculture</i> : to equip and modernise irrigation systems and extend them to new agricultural areas (v) <i>water</i> : to desalinate	(i) promote renewable energy (ii) improve energy efficiency (iii) reduce emissions from waste (iv) afforest 50,000ha / year	(i) improvements in the water sector (ii) development of new irrigation systems (iii) reduction of discharges, establishment of marine protected areas, etc. (iv) afforest and protect against erosion.	USD 50 billion (of which USD 24 billion should come from international financing)

	seawater and to reuse treated wastewater (vi) waste: to improve collection and establish landfill and recycling centres			
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In each of the following country analyses, the sectors chosen have been selected as key priorities from the NDC targets outlined in the table above. Against these priority sectors, the country-specific analyses provide an

Legal and Institutional Framework for Implementation of Jordan's NDC

Jordan's NDC: legal status and priority sectors

The Hashemite Kingdom of Jordan submitted its NDC to the UNFCCC Secretariat on 10 September 2015. Jordan is a State Party to the UNFCCC and signed the Paris Agreement when it was opened for signature in New York on 22 April 2016. Jordan ratified the Paris Agreement on 4 November 2016.³³

The Paris Agreement holds a very high priority at the domestic level in Jordan, particularly given that the country is already suffering from the adverse effects of environmental degradation and climate change. Nonetheless, the Jordanian NDC has no formal legally-binding effect within the constitutional

initial pilot mapping of the existing laws and institutional arrangements in place to support the achievement of key priorities in each country's NDC, highlighting potential areas for further study and reform.

and legislative framework of the country, but should guide budgetary, policy and even legal and institutional reform ramifications for the country. The NDC was developed by Jordan's Ministry of Environment, in cooperation and coordination with national governmental and private stakeholders. While the NDC was not enacted by Parliament as a law, Jordan's commitment to progressively increase its ambition under Article 4.3 of the Paris Agreement is directly applicable in Jordan, as it is a monist country. As a matter of policy, the ratification of the Paris Agreement strongly encourages the country to continue to improve and strengthen its legal framework in order to support achievement of the NDC.³⁴

According to Jordan's NDC 2016, Jordan has committed to reduce GHG emissions by a total of 14 % before 2030. This commitment includes an unconditional reduction of 1.5% before 2030.³⁵ Subject to availability of international financial aid and support

³³ Paris Agreement – Status of Ratification: http://unfccc.int/paris_agreement/items/9444.php.

³⁴ While the government of Jordan remains a sovereign country, and its Parliament retains the ability to reform its laws at any time, a change to the laws that would make it more difficult to achieve Jordan's NDC would be challenging as a matter of policy to promote. A country which weakened its laws related to the NDC could risk

being accused of bad faith under the Paris Agreement, coming under scrutiny internationally.

³⁵ Jordan's Intended Nationally Determined Contributions (i)NDC 2016, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Jordan/1/Jordan%20INDCs%20Final.pdf>.

for implementation, Jordan has committed to reduce its GHG emissions by a further 12.5% by 2030.

The targets are accompanied by plans for a range of GHG emission reduction actions across several sectors, and adaptation actions in targeted sectors. Although Jordanian contributions to the world's overall GHG emissions are small, climate change is one of the greatest threats facing the country and Jordan is seeking to establish itself as a key actor in efforts to combat global climate change. In addition, Jordan's NDC also focuses on adaptation actions. These actions, supported not only by policies and strategies, but also by legislation, are articulated in the Jordan NDC 2016. To implement and achieve the commitments undertaken in its NDC, Jordan seeks to mobilize USD5.7 billion in investment, and relies on USD5.2 billion in international financing towards low GHG and climate-resilient development.

Jordan's current GHG emission levels, according to international and national statistics based on the country's status in the year 2006, amount to a contribution of approximately 0.06% of the world's emissions. In terms of sectors within Jordan, this is divided across five main sectors, with 73% of emissions contributed from the energy sector, including transport activities, 10% emissions from waste, 9% emissions from industry, 5% emissions from agriculture and 3% emissions from land use, land-use change and forestry (LULUCF).

As such, energy use is responsible for the dominant share of emissions and Jordan still faces a growing demand for energy. The Jordanian NDC 2016 has a clear focus on energy efficiency and renewable energy projects as the most

feasible and effective mitigation instruments.

As noted in Jordan's NDC, the country has taken several key decisions, aligned to targets and commitments, to encourage investment in the economic sectors of highest importance to the implementation of the Paris Agreement. The measures which support these decisions may provide incentives for international investors seeking opportunities for sound and government-supported low-carbon, climate-resilient investments. Selected decisions and priorities are discussed in the following sections.

NDC priorities

To increase renewable energy from 2% of overall energy in 2013 to 10% in 2020

Legal and institutional enablers:

This NDC priority is supported by high-level policy documents, such as the National Climate Change Policy 2013 – 2020 and the 2025 National Vision and Strategy.

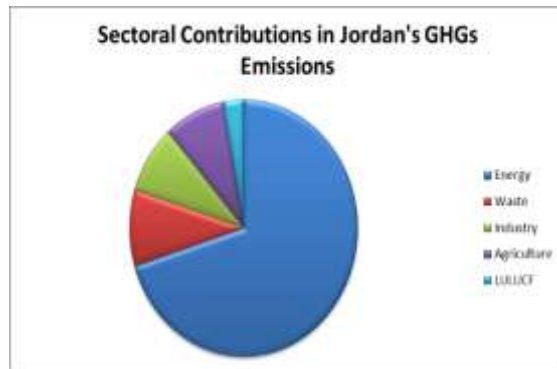
The National Climate Change Policy 2013-2020 aims to provide a holistic nationwide policy with strategic objectives and policies for mitigation and adaptation. It offers an overarching framework for mitigation actions and projects that will be undertaken in order to facilitate actions to support the NDC commitments, with institutional arrangements in place to ensure that progress made under this policy, and is monitored by a National Committee on Climate Change, overseen by the Ministry of Environment. Jordan's 2025 National Vision and Strategy further supports and emphasizes this commitment, setting a nationwide

target of 11% renewable energy to the total energy mix by 2025. Moreover, a National Strategy and Action Plan for Transitioning Towards the Green Economy 2016-2025 ('Green Economy Strategy') remains under development.³⁶

The Green Economy Strategy seeks to reduce petroleum-dependent pathways for investment in industry, transport and the generation of electricity, including increasing the use of energy generated by renewable resources. Under this Strategy, the Government of Jordan has launched initiatives to generate electricity for mosques, schools, embassies, factories, and other governmental-owned or -managed premises using solar technology. According to MEMR, there are several small-scale entities, including households, mosques, schools and small industrial facilities that already generate solar electricity with a total capacity of 30 megawatts.³⁷

The Strategy also seeks to establish nuclear power in the next few years to enhance the country's energy mix and protect the country's national economy from oil price fluctuations. However, this aspect of the Strategy has received heavy criticism and opposition from civil society, environmental specialists and activists, local community leaders and a

considerable majority of the public. The main concerns revolve around environmental and safety considerations, as well as the lack of transparency related to environmental impact assessment, especially in emergency situations.³⁸



Several important Jordanian laws provide the framework for government actors, investors and others in the country to assist in the achievement of Jordan's NDC commitment to increase renewable energy from 2% of overall energy in 2013 to 10% in 2020. These include:

- Law No. 13 of 2012, Jordan's Renewable Energy and Energy Efficiency Law (REEL) (as amended)³⁹, and its contribution to implementing the Green Economy Strategy
- Electricity Law and its amendments No. 64 of 2002 (the "Electricity Law")⁴⁰

³⁶ Ministry for the Environment (2016) *National Strategy and Action Plan for Sustainable Production and Consumption 2016-2025* (<https://www.switchmed.eu/en/documents/scp-action-plan-jordan.pdf>.) and InfoArabi (2013) 'Energy Minister presents the benefits of the renewable energy law' <http://ar.ammannet.net/news/37342>

³⁷ See '400 mosques in Jordan run on solar energy — Awqaf Ministry' <http://www.jordantimes.com/news/local/400-mosques-jordan-run-solar-energy-%E2%80%94-awqaf-ministry>, and 'Using solar power to generate electricity: an uptrend that 'needs further gov't support',' <http://www.jordantimes.com/news/local/using-solar-power-generate-electricity-uptrend-needs-further-gov%E2%80%99t-support%E2%80%99>

³⁸ For further information on Jordan's nuclear programme and domestic opposition see Magid, A. (2016) 'Time to Reconsider Jordan's Nuclear Program' *Middle East*

Institute <http://www.mei.edu/content/article/time-reconsider-jordan-s-nuclear-program> and Nicholas Seeley (2014) 'The Battle Over Nuclear Jordan' *Middle East Research and Information Project* <http://www.merip.org/mer/mer271/battle-over-nuclear-jordan>.

³⁹ Renewable Energy and Energy Efficiency Law, No 13 of 2012

[http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/renewablelaw.pdf_\(in_Arabic\)](http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/renewablelaw.pdf_(in_Arabic)). Translation into English by the International Labour Organisation: <http://www.ilo.org/dyn/natlex/docs/ELECTRONIC/94599/111048/F-1870188604/Clean+Version-Final-Renewable+Energy++Energy+Ef.pdf>

⁴⁰ Law on Electricity, No. 64 of 2002

<http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/%D9%83%D9%87%D8%B1%D8%A8%D8%A7%D8%A1.pdf> (in Arabic).

- Renewable Energy and Energy Conservation Fund System No.49 of 2015 (the “Renewable Energy Fund System”)
- The Environmental Protection Law No. 6 of 2017 (the “Environmental Law”)
- The Jordanian Investment Law No. 30 of 2014 (the “Investment Law”)
- The Regulation of Non Jordanian Investments No. 77 of 2016 (the “Non Jordanian Investments Regulation”)
- The Conditions and Terms for Exempting Renewable Energy Resource Systems and their Equipment, Tools, and Rationalization of Energy Consumption and their Product Input from Custom Fees, and their Subjection to General Sales Tax in the Amount of (Zero) No. 13 of 2015 (the “Renewable Energy Exemption Regulation”)

Renewable Energy and Energy Efficiency Law (REEL)

The REEL requires the Ministry of Energy and Mineral Resources (MEMR) to work towards increasing the contribution of renewable energy sources to the energy mix and seeks to facilitate investment in renewable energy projects. The most important commitments are found in Article 11 and 12 of the REEL. Article 11 offers tax exemptions to all new and eligible renewable energy equipment, systems, and devices, meaning that no taxes or customs are imposed on these items by

the State. Article 12 establishes a special fund, chaired by the Minister of Energy, to mobilise and manage new resources to finance and support renewable energy projects. This fund is meant to be accessible to local and international companies, and will be financed by national and international institutions.⁴¹

In effect, the REEL provides investors who are interested in renewable energy projects with three ways to proceed. First, small-scale renewable energy generation projects (less than 5MW) that are connected to the distribution system, rather than the transmission network, and consume some of the energy they produce on-site (self-generation) may take advantage of net metering and price support measures to feed excess energy that is not consumed on site into Jordan’s electricity grid. Given Jordan’s high electricity prices,⁴² this net metering policy would tend to be viewed favourably by investors.⁴³ The excess electricity is guaranteed preferential prices (via a feed-in-tariff – see further below) and allows the supplier to deduct the amount from the supplier’s utility bill later.⁴⁴ Second, large-scale projects can participate in government tenders based on government plans to develop renewable energy technology at a specific site (Article 5). Third, investors may choose their own site and submit a plan for a renewable energy project to the MEMR as a Direct Proposal (Article 6). The REEL provides important privileges for a ‘green investor’ or project developer,

⁴¹ Further reading can be found IEA (2013) ‘Renewable Energy & Energy Efficiency (Law No. 13)’ <http://www.iea.org/policiesandmeasures/pams/jordan/name-36862-en.php>.

⁴² The Jordan Times (2016) ‘Commission sets new electricity tariffs for 2017’ <http://www.jordantimes.com/news/local/commission-sets-new-electricity-tariffs-2017>

⁴³ IRENA, (2014) ‘Pan-Arab Renewable Energy Strategy 2030’

https://www.irena.org/DocumentDownloads/Publications/IRENA_Pan-Arab_Strategy_June%202014.pdf p. 49

⁴⁴ Adam Smith International (2013) ‘Study of mechanisms to incentivize the financial sector to scale up financing of green investment in Jordan’, p. 25-26 http://www.vivideconomics.com/wp-content/uploads/2015/03/Jordan_Green_Investment_Final_Report_English.pdf

such as the ability to propose their own sites for development activities. The entire power output from a project must be sold pursuant to a Power Purchase Agreement (PPA), and the developer must enter into a grid connection agreement providing for connection to the transmission grid.

The Direct Proposal model has demonstrated certain elements of success, and its implementation has been facilitated by other supportive legal and policy measures, including the preparation of a list of suitable locations with high potential for exploiting renewable energy sources, and a strengthened mandate and capability of MEMR to issue tenders for development on particular sites. Favourable policies are also being attempted, such as incentives to defray costs of grid connection for new investments and developments.⁴⁵

The REEL operates to attract private sector investment by providing greater certainty to potential investors. Article 8/A of the REEL guarantees that the government will buy renewable energy in accordance with a PPA.⁴⁶ Jordan provides price support in the form of a feed-in-tariff (FiT), which helps small and medium-sized energy development projects, especially in areas with lower electricity prices.⁴⁷ Preferential prices may help attract investment in small and medium-scale projects.

Together, the provisions in the REEL serve to increase incentives for large-scale projects as well, as described

above. One example of large scale renewable energy infrastructure is a Concentrated Solar Power system (CSP). Jordan, along with other MENA countries, is working on a plan to use development funds to build CSP power plants and transmission infrastructure. Jordan is currently building the largest Solar Power-plant in the Middle East (200 MW), generating annually 563.3 GW/h. This project is under construction at the moment, expected to be completed in 2019.⁴⁸ The REEL, and provisions made under it, and transitioning from a feed-in-tariff to a competitive tender process, has resulted in a significant number of investment proposals for the development of new solar energy sites in Jordan.

Electricity Law

The 2002 Electricity Law regulates the granting of licenses for electricity generation, transmission, system operation, supply or distribution operations and seeks to encourage local and foreign investment in the electricity sector and to promote the use of renewable energy. The law also allows private renewable energy companies to connect with electricity grids and set renewable energy guidelines.⁴⁹ Article 45 is particularly relevant, permitting investors to lease or buy any land for a project, and in cases of owner refusal, to apply to the government to request official expropriation of the land, according to the due process explained in the 1987 Expropriation Law. This grants extremely high priority to renewable

⁴⁵ Eversheds and Price Waterhouse Coopers (2016) 'Developing Renewable Energy Projects' <https://www.pwc.com/m1/en/publications/documents/eversheds-pwc-developing-renewable-energy-projects.pdf>

⁴⁶ Y. E. Marar (Ministry of Energy and Mineral Resources – Jordan) (2011) 'Jordan's Renewable Energy Program Best Practices in Renewable Energy: Policy Incentives and Enabling Environment', <http://pubs.naruc.org/pub/5380AA3D-2354-D714-514C-B9473BAD66B2>

⁴⁷ The feed-in-tariff gives 120 Fils per kWh for solar energy, 95 Fils per kWh for hybrid energy and 85 Fils per kWh for other forms of renewable energy.

⁴⁸ As a testament to the Government's determination to promote renewable energy, the Azraq Refugee Camp in Jordan, the world's cleanest refugee camp in 2017, is totally powered by renewable energy.

⁴⁹ <http://www.lse.ac.uk/GranthamInstitute/law/general-electricity-law-no-64-of-2003/>

energy projects and is a clear incentive for renewable energy investments in land use and planning. It should be noted that the expropriation of any land is subject to certain guarantees, such as due process, just compensation, and must be in the public interest. These guarantees seek to justify official expropriation of land only in exceptional circumstances. Nevertheless, implementation of the law is challenging, and certain failings are visible, including with regard to the interpretation of 'public interest' and the way in which 'just compensation' is calculated.

The 2012 REEL complemented the Electricity Law, by prioritizing renewable energy and, more importantly, enforcing the independence of national authorities, introducing a system of Independent Power Producers (IPP)⁵⁰ and establishing the Electricity Regulatory Commission (ERC).⁵¹

Selected energy sector investments and programmes

The current Jordanian legal framework has been praised as stable, with transparent policies building a supportive environment to increase investment in and diffusion of renewable energy. The country has secured significant cost reductions and maintained investor confidence, which may increase as policymakers remain committed to the framework.⁵²

The European Union (EU) and Gulf Cooperation Council (GCC) are the main public financial contributors to the country's plans to undertake renewable energy and energy efficient projects. The EU has committed €10 million to a project designed to steer and facilitate the government's Renewable Energy Strategy 2007-2020.⁵³ In 2013, Jordan announced that it had signed approximately 30 MOUs to generate 1GW of power through solar and wind projects. The GCC granted Jordan USD 5 billion in 2014, of which USD 300 million was used for wind and solar projects. Furthermore, the UAE-based Masdar is the main private investor in these projects, successfully delivering the Tafila Wind Farm, which is expected to account for 6.5% of Jordan's 1.8GW 2020 target, and agreeing to develop a 200 MW solar photovoltaic (PV) plan for the Jordanian Ministry of Energy.⁵⁴ The country's investment plans include Build-Operate-Transfer (BOT) arrangements for wind and solar energy and the development of its electricity grid.

The European Bank for Reconstruction and Development (EBRD) is providing a loan of US\$ 70 million to Green Watts Renewable Energy LLC, for the construction of an 86 MW wind power plant in the Ma'an Governorate of southern Jordan. The plant is the first wind project developed under round one of

⁵⁰ Electricity Law 2002, article 1: "An Independent Power Producer is a non-governmental entity, which establishes a power, station to sell electric power."

⁵¹ See the World Bank unofficial translation of the Law found in ' http://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/ppp_testdumb/documents/JordanGeneralElectricityLaw2003English.pdf. ' and also Y.A. Failat (2013) 'The Jordanian Electricity Regulatory Commission: Independence in Theory or in Practice?' *Oil, Gas & Energy Law Intelligence*.

⁵² Puliti, R. (2015.) 'Financing renewables: how Egypt and Jordan are attracting private capital',

<http://blogs.ft.com/beyond-brics/2015/11/30/financing-renewables-how-egypt-and-jordan-are-attracting-private-capital/>.

⁵³ S. Zafar (2016) 'Clean Energy Resources in Jordan' EcoMENA <http://www.ecomena.org/tag/renewable-energy-law/>

⁵⁴ Masdar (2016) 'Masdar to develop 200MW Solar PV Plant in Jordan' <http://www.masdar.ae/en/media/detail/masdar-to-develop-200mw-solar-pv-plant-in-jordan>.

Jordan's renewable energy feed-in-tariff programme and will increase the country's installed wind capacity by around 40 per cent. The EBRD has been supporting Jordan's renewable energy programme since 2012, including financing a growing number of large-scale solar photovoltaic power plants, such as at Mafraq in northern Jordan.

Legal and institutional barriers and opportunities:

Despite generally positive reviews, a number of legal and institutional barriers affect the possibility of achieving the desired increase of renewable energy from 2% to 10% by 2020. These barriers are both legal and institutional in nature, but can also be affected by political, financial and practical obstacles. For instance, political instability and the current refugee crisis may dramatically worsen Jordan's ability to take the necessary measures to increase its dependence on renewable energy. As another example, Jordan is highly dependent on aid and fiscal debt to cover expenses, and has encountered significant challenges in securing approval for budgets without major revisions and debate.⁵⁵ A chronic budget deficit may mean that Jordan is unable to provide sufficient financial incentives, and also may slow down building and investment in the infrastructure required to support renewable energy.

More specifically, in legal and institutional terms, Articles 4 – 9 of the REEL provide for a lengthy technical and administrative process before the

developer of a renewable energy project can obtain the relevant license. Article 6(b) sets out the requirements for direct proposals. The proposal is made to MEMR via the Direct Proposal Evaluation Committee, and a Council of Ministers makes the final decision. The criteria that are considered in this process, and other elements of the institutional decision-making process, require further clarification. In this regard, complicated and inefficient processes hold the potential to discourage renewable energy projects.

Moreover, although the REEL provides for several investment incentives, as discussed above, gaps in awareness among domestic and international investors remain with regards to the availability of these incentives. Similarly, although customs duties exemptions on imported renewable energy equipment are beneficial, the process and criteria for taking advantage of these exemptions is overly complex. Greater awareness and clarity regarding these procedures may offer opportunities to mobilize increased investment in renewable energy, enabling the achievement of the NDC renewable energy priority.

Further, the Jordanian Electricity Law prohibits private-to-private transmission, which could be seen to undermine the potential of these legal instruments to facilitate increased use of renewables.

Jordan's NDC refers to the need to encourage and support local production of renewable components.⁵⁶ Here, a word of caution should be included. Measures to encourage local production and the use of local content

⁵⁵ K.H. Sowell (2016) 'Jordan is Sliding Toward Insolvency', Carnegie Endowment for International Peace <http://carnegieendowment.org/sada/63061>.

⁵⁶ Jordan INDC, Section 3.2 Mitigation actions i. Energy sector.

<http://www4.unfccc.int/submissions/INDC/Published%20Documents/Jordan/1/Jordan%20INDCs%20Final.pdf>

requirements (LCRs), are likely to be non-tariff trade barriers under the WTO, due to the fact that they lead to “more preferred treatment” of national industries.⁵⁷

In summary, continuing legal and institutional barriers to achieving Jordan’s NDC renewable energy target may include complicated administrative processes, gaps in high level action plans that might provide for stable and transparent implementation of existing legal and regulatory incentives, and a lack of awareness and capacity, among private and public sector stakeholders, regarding available incentives. Assessments, followed by consultations, detailed technical reviews, gap analyses and prioritization, could support reform and improvement of Jordanian laws on energy efficiency and renewable energy to allow and encourage firms and individuals to generate renewable and sustainable energy products.

To improve energy efficiency by 20% by 2020

Legal and institutional enablers:

Several key Jordanian Laws establish the framework which guides Jordan’s NDC priority to improve energy efficiency by 20% by 2020, including:

- Law No. 64 of 2002 on Electricity,
- Law No. 13 of 2012, Renewable Energy and Energy Efficiency Law (REEL) (As Amended), and
- The Environmental Protection Law No. 6 of 2017 (the “Environmental Law”).

Jordan’s National Climate Change Policy 2013-2020 indicates that the sector with the greatest potential for energy efficiency is buildings. For example, green building codes will be established and large buildings will be required to have solar water heating. There is also opportunity in various sectors to increase demand-side efficiency.

Electricity Law

The 2002 Electricity Law made energy efficiency a priority for Jordan. The law allows the Electricity Sector Regulatory Commission to promote energy efficient technology and enables the Commission to help regulate efficiency standards of electric devices (such as white goods).

REEL and secondary legislation

Article 11 of the REEL sets out tax exemptions for energy efficient equipment. Article 18 of the REEL authorises the Council of Ministers to issue by-laws necessary to give effect to the aims and objectives of this law, including “the procedures and measures for energy conservation and energy efficiency in various sectors”. A 2012 by-law on Regulating Procedures and Means of Conserving Energy and Improving Its Efficiency established rules for energy audits, appliance labels and smart metering. This by-law also set out Minimum Energy Performance Standards (MEPS) for buildings. Article 3 of the by-law addresses the need to promote investment. Furthermore, Article 11 sets out a process for investors to participate in tenders for projects to conserve energy or increase energy efficiency. Alternatively, investors can submit direct offers to undertake such projects.⁵⁸

⁵⁷ Aaditya Mattoo and Arvind Subramanian, (2013) ‘Four Changes to Trade Rules to Facilitate Climate Change Action’ Centre for Global Development http://www.cgdev.org/sites/default/files/Mattoo_Subramanian-four-changes.pdf.

⁵⁸ See page 19 of Jordan’s National Climate Change Policy 2013-2020; Bylaw No. (73) 2012, The Bylaw on Regulating Procedures and Means of Conserving Energy and Improving Its Efficiency

Jordan's energy efficiency standards compare relatively positively to European Union (EU) standards enshrined in the 2012 Energy Efficiency Directive. However, the EU standards go further; for example, they also include a requirement for energy performance certificates for each building, which provide information about the energy performance to prospective buyers or tenants. This measure aims to empower energy consumers to better manage their consumption, and is complemented in the EU by easy and free access to data on consumption through individual metering. These measures could be adopted by Jordan to strengthen energy efficiency regulations and help the country meet its NDC commitments.

Article 12 of the REEL establishes the Renewable Energy and Energy Efficiency Fund, which aims to provide resources to encourage the exploitation of renewable energy resources, and also the rationalization of energy consumption including within small Renewable Energy Facilities. The Fund represents Jordan's main instrument for financing renewable energy and energy efficiency investments.

The Environmental Law

The 2017 Environmental Law regulates protection of the environment and its sustainability, enhances the capacity and mandate of public administration at central and local levels and introduces waste prevention and waste management as well as enforcement mechanisms. The 2017 amendments enhanced the coverage of waste collection and improved waste management by reducing solid waste and reusing it, reduced seepage of wastewater outside the network and increased the capacity to treat it, and prevent environmental pollution.

Moreover, this law has set out deterrent sanctions that could reach up to 10 million JDs penalty and 15 years of imprisonment. The Environmental Law supports Jordan's ability to achieve its energy-related NDC, by promoting air quality and regulating air pollution.

Together, these laws seek to encourage investment in energy efficiency across the building, industry and manufacturing sectors of the Jordanian economy.

Legal and institutional barriers and opportunities:

To help Jordan meet its energy efficiency objectives, it must improve the monitoring and enforcement of regulations. In order to reduce the risks for investors and offset the up-front cost of energy conservation projects, Jordan should establish additional funding mechanisms and financial incentives to complement the existing Renewable Energy and Energy Efficiency Fund and the tax exemptions in the REEL.

Jordan must work towards improving communications with stakeholders to facilitate the uptake of these financial incentives and clarify institutional roles, as noted in Jordan's National Climate Change Policy 2013-2020. Particularly, training of installers and builders on new energy efficiency techniques has been mandated in the European Union, and could be replicated in Jordan.

In addition, the existing provisions of the REEL could be complemented by energy performance certificates that provide information about the energy performance of a building and practical advice on improving such performance to buyers and renters of buildings. When implementing this scheme in the EU, training sessions for independent certifiers and information campaigns for

owners and tenants were an important complement to the certificates. To ensure strict standards of energy efficiency certification are followed, training for inspectors and auditors is vital. Regular inspections of energy-intensive appliances, particularly air conditioning units, could also help Jordan to achieve its energy efficiency target.

There is also potential that market forces related to the heavy burden of higher energy prices on the State, firms and individuals may provide incentives for greater energy efficiency.

Selected energy efficiency investments and programmes

International support provided, for instance, by GIZ in Jordan has been concentrated on securing greater energy efficiency in the water sector, which consumes around 14% of generated electricity. Two projects have been piloted and have already resulted in raising awareness about energy efficiency potential, engaging important private sector actors in improvements of energy management systems.⁵⁹ As a consequence, more water utilities are able to assess pumping stations and other infrastructure for retrofitting, using the applied Energy Performance Contracting (EPC) model.⁶⁰ The opportunity for support from foreign companies is available,

and the necessary regulatory platform may benefit from careful review to ensure that its instruments can be applied more coherently.

To improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet

Legal and institutional enablers:

Several important Jordanian Laws shape the efforts of government, state and private actors in achieving Jordan’s NDC commitment to improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet. These include:

- Public Transport Law for Passengers No. 33 of 2010,⁶¹
- the Law of Railways No. 24 of 2012,⁶² and
- the Environmental Law.



CC0 license.

⁵⁹ International Water Association (IWA) (2015). “Improving Pumping Energy Efficiency in Jordan”. <http://www.iwa-network.org/press/improving-pumping-energy-efficiency-in-jordan/> “The first project in Beqourieh (in Balqa) engaged the Water Authority and Wilo SE, a German manufacturer of pumps and pumping systems. This pilot resulted mainly in building awareness about the energy efficiency potential and involving the private sector in energy management of water pumping applying the Energy Performance Contracting model – EPC. The second pilot project applied EPC by engaging a local engineering firm, in investing in retrofitting and operating the Wala and Lib pumping stations with Wilo SE supplying the pumps. This resulted in culturing a new business model with private and public entities.”

⁶⁰ Ibid.

⁶¹ Land Transport Regulatory Commission, ‘Public transport passenger Act’ [http://www.ltrc.gov.jo/?q=ar/node/207#.V64nlfI94fJ_\(in_Arabic\)](http://www.ltrc.gov.jo/?q=ar/node/207#.V64nlfI94fJ_(in_Arabic))

⁶² Law of Railways of 2012 http://www.ltrc.gov.jo/sites/default/files/qnwn_lskk_lhdydy_rqm_24_lsn_2012_lsd_r_fy_ljryd_lrsmy.pdf

Law of Public Transport

Article 9 of this law is one of its most important provisions, entrusting the Public Transport Commission with the authority to organize and monitor public transportation in the Kingdom. This gives a single institution the mandate to prioritise public transportation. The Law of Public Transport aims to implement a coordinated and integrated system for public transport. Following the introduction of this law, a Transport and Mobility Master Plan was undertaken, which aimed to increase the share of public transport in Amman from 14% to 40% by the year 2025.⁶³ This includes the Bus Rapid Transport project in Amman, which is currently under construction. It remains incomplete, in part due to complicated institutional structures and some legal and administrative complications.⁶⁴ Nonetheless, the Law of Public Transport streamlines public transport planning and strengthens institutions' mandate and capacity to complement specific objectives of environmental protection.

Law of Railways

Article 3 of this law entrusts the Ministry of Transport with the authority to set up railway networks throughout the Kingdom taking into consideration the national road networks and neighbouring states' railway locations.⁶⁵ These rules seek to ensure that railways are subject to careful controls and monitoring to secure greater transparency through various stages of development that are contemplated. To date, the only railway in operation in Jordan is the Aqaba / Hejaz railway, which is only used to

transport phosphate from mines to the Gulf of Aqaba and for one passenger train a day (mainly for tourists).⁶⁶ The Law of Railways does not include any environmental considerations, thereby missing a key opportunity to use rail travel in an integrated public transport network. Consideration should be given to whether railways could reduce the GHG emissions from transport in Jordan.

The Environmental Law

Article 11/b of this law specifies that owners and drivers of vehicles are responsible for limiting emissions. Installing special devices to control emissions above the permissible limits shall be mandatory. Any vehicle owners who violate emission limits shall be referred to the Court, who can punish the perpetrator by imprisonment, a fine or both. Article 8 of the Regulations for the Protection of the Air (Regulations No.28 of 2005) indicates that the Minister will provide guidelines for air pollution and vehicle testing. According to the same Article the "entities concerned" must abide by these guidelines. To date, no such guidelines have been developed; a missed opportunity for reducing GHG emissions from the transport sector.

Jordan has witnessed significant recent improvements in public transport, furthering progress towards its 25-year Green Growth Plan to develop the public transportation network.⁶⁷ Jordan has also set demand-side targets in the transport sector, to reduce emissions, including removal of fuel subsidies in 2012. This measure was complemented by the introduction of a

⁶³ Greater Amman Municipality (2016) 'Amman Bus Rapid Transport' http://www.ammanbrt.jo/en/brt_prog.asp

⁶⁴For more information about the debate over the project see in Arabic , <http://www.ammonnews.net/print/128804> & <http://www.ammanbrt.jo/ar/default.asp>

⁶⁵ Railways Law No. 24 of 2012

⁶⁶ 'Jordan Hejaz Railway' <http://jhr.gov.jo/en>

⁶⁷ UNEP (2011) Towards a Green Economy in Jordan. A Scoping Study http://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Green_Economy_Jordan_UNEP.pdf

cash transfer program, which has now finished.⁶⁸

Legal and institutional barriers:

In achieving Jordan's NDC target in relation to zero emissions renewable transportation, the main barriers are primarily due to institutional weaknesses. Random and fragmented urbanization, unguided by comprehensive planning, provide the main barriers to Jordan's ability to achieve its target to develop its public transportation sector.

Article 5 of Law No. 79 of 1966 for organizing cities, villages and constructions, for instance, excludes the Ministry of Agriculture from the Supreme Council for organizing cities, villages and constructions, which negatively affects the ability of planning processes to integrate competing priorities for land use.⁶⁹ Despite partial amendments over the years, this defect in the original law still exists today.

Jordan's Ministry of Transport noted a lack of regulations and institutions to support legislative frameworks to ensure appropriate coordination between the private companies who are the service providers for public transportation. Furthermore, as different laws and regulations evolve, the challenge is to ensure that the jurisdictions and mandates of the various authorities involved are clearly delineated.⁷⁰

Since 2000, Jordan has strengthened laws and regulations in public transport that encourage private investment.⁷¹ For example, the Public Transport Regulatory Commission (PTRC) was established in 2001 pursuant to the *Temporary Public Transport of Passengers Law number (48)*.⁷² Nonetheless, the lack of coordination has led to calls for new regulations for public transport, particularly laws or regulations for establishing sustainable public transport.

Insufficient engagement of public private partnerships (PPPs) may be a further important gap in efforts to modernise Jordan's transport industry.⁷³ Recent attempts to secure sufficient investment for the introduction of an efficient and effective tram service in Amman and to improve public transport routes in the capital have encountered significant challenges and delays.⁷⁴ For example, Jordan set up a PPP to build the Light Rail System (LRS) between Amman and Zarqa. The government agreed to provide land and infrastructure for the project, while a group of private companies would build and operate the system. This project failed to attract acceptable bids until 2006, when the government provided increased financial support and additional financial incentives. Lowering the risk for the private sector may have helped the government attract private investment. Unfortunately, the financial crisis in 2009 derailed this project and it is yet to secure finance.⁷⁵

⁶⁸ Abdelkrim Araar and others (2013) 'An Assessment of the Jordan 2012 Petroleum Subsidies Reform and Cash Compensation Program' The World Bank.

⁶⁹The Law No.79 of 1966 for organizing cities, villages and construction, http://ammancity.gov.jo/site_doc/attach-504162.pdf

⁷⁰ Jordan National Competitiveness Observatory 2010-2011 Report, Chapter 7, p. 106-107: <http://www.jnco.gov.jo/NationalReportsandSectorialStudies.aspx>

⁷¹ UNEP (2011) Towards a Green Economy in Jordan. A Scoping Study

http://www.greengrowthknowledge.org/sites/default/files/downloads/resource/Green_Economy_Jordan_UNEP.pdf

⁷² See the website for the Land Transport Regulatory Commission:

<http://www.ltrc.gov.jo/?q=ar/node/207#.V64nlf194fJ>

⁷³ EBRD Document on Strategy for Jordan. 1 October 2014.

⁷⁴ 'Jordan Plans Tram System' 4 May 2016 <http://www.railwaypro.com/wp/jordan-plans-tram-system/>, Obediat (2016) 'Map outlines public transport routes in Amman' <http://www.jordantimes.com/news/local/map-outlines-public-transport-routes-amman>

⁷⁵ OECD (2013) Investment Policy Reviews p. 145.

Additional investments are not yet fully guided by adequate transparency measures and comprehensive technical planning. The gaps and weaknesses in these public transport projects can be attributed – in part – to challenges in municipal and national planning process. The delays are likely to affect Jordan’s ability to attract investment to achieve an ambitious and visionary NDC priority, in relation to incentivizing a zero emissions transport fleet. More in-depth technical and operational gap analysis, followed by a participatory technical assessment of legal and institutional strengths and weaknesses across the main legislative instruments and institutions in this sector, could serve to identify new opportunities for reform and capacity-building that will facilitate future investment in this sector to achieve this NDC goal.

To improve the agricultural sector’s contributions to adaptation

Jordan’s National Climate Change Policy 2013-2020, among other important policy statements and declarations, prioritize the need for Jordan to improve the agricultural sector’s contributions to adaptation to climate change.⁷⁶ Jordan is considered an arid and semi-arid country with limited water resources, and green cover, forest and national parks constitute less than 1% of the country area. Average rain fall also varies from year to year.

⁷⁶ National Climate Change Policy 2013-2020
http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy_PDF.pdf

⁷⁷
<http://www.moa.gov.jo/Portals/0/law/%D9%82%D8%A7%D9%86%D9%88%D9%86%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D8%A9%20%D8%B1%D>

Legal and institutional enablers:

Several key Jordanian laws affect, and could serve to support, Jordan’s efforts to deliver improved agricultural sector contributions to climate adaptation.

These include:

- Law No. 13 of 2015 Law of Agriculture,⁷⁷ and
- The Aligned National Action Plan to Combat Desertification in Jordan 2015-2020

Law of Agriculture

The Law of Agriculture requires the Ministry of Agriculture to work towards increasing the quality of life of farmers. Article 59 protects farmers against loss of profits due to subsidized imports or dumping, as long as there is no conflict with international agreements signed by Jordan. Since Jordan became a World Trade Organization (WTO) member in 2000, this legislation may conflict with WTO law requiring justification for such measures. Article 27 of the Jordanian Agriculture Law should also be highlighted, as it prohibits the alteration of forest land into commercial or residential land, as well as its inclusion within existing municipal development strategies.⁷⁸ This ensures that such forests are kept under the protection of the Ministry of Agriculture.

To support effective mitigation and adaptation to climate change, there is a need to maintain and increase existing forest lands by planting new forests and green belts at the desert’s border. For instance, as a recent study concluded, Jordan requires at least 24 million trees to offset CO₂ emitted only from the transportation sector.⁷⁹ For the time

⁷⁸ Agriculture Law No. 44 of 2002, Art 27.

⁷⁹ Amer Khatatba (2015) ‘Study: Jordan needs 24 million new trees to provide oxygen’ <http://bit.ly/2IR6jZR> (in Arabic).

being, this effort seems limited to fragmented plans for urbanization and infrastructure investment, with high oil prices also forcing a considerable percentage of people to deforest for fuel during winter cold seasons. There is an opportunity to strengthen and update the Agriculture Law, to protect forests and increase forested areas to reach at least 10% of the Kingdom's total area, as recommended by international instruments since 1992.⁸⁰

The Aligned National Action Plan to Combat Desertification in Jordan 2015-2020

In addition, to combat desertification, Jordan has established "The Aligned National Action Plan to Combat Desertification in Jordan 2015-2020". Drought, soil erosion, overgrazing of national vegetation, forest cutting and unsustainable land use are the main factors causing desertification. Several measures of interest for more sustainable investment in climate mitigation and adaptation are included in the Action Plan, including establishing a national level knowledge hub for monitoring investments and coordinating learning of multiple stakeholders in sustainable land management, to optimize allocation of resources. Other measures for attracting investments that are outlined in the Action Plan include green bonds, conservational leasing/trusts, PPPs, long term concessional contracts, and grants, loans, and equity investments.⁸¹

Legal and institutional barriers:

Jordan was once characterized by a very productive agricultural sector. Similar to the challenges for energy investment, existing barriers include legal and institutional matters but also extend further. For instance, in recent years, Jordan's agricultural sector has suffered several abrupt reversals due to natural and climatic changes such as water shortages and soil related challenges, random urbanization, and marketing difficulties due to important political instabilities in the region. The regional situation especially in Iraq and Syria adversely affects Jordan's ability to export its agricultural products. Agriculture is now widely considered as less financially feasible, and farmers are suffering from an inability to operate due to their indebtedness.

Jordan's legislative framework faces significant challenges of implementation and enforcement as the laws tend to overlap and conflict with one another.⁸² There is institutional overlap between the Law of Agriculture and the Environmental Law, for example.

Jordan's National Climate Change Policy 2013-2020 indicates that farmers are affected by climate change due to irregular high disaster risks such as heavy rainfall, floods and drought. Despite this clear identification of risk, farmers are exposed to weak protection from climate change, due to conflicts and overlaps in institutional mandates. Specifically, disaster risk reduction (DRR) falls under the defense portfolio, while the Ministry of Agriculture is directly responsible for enacting laws to

⁸⁰ Since Earth Summit in Rio de Janeiro in 1992, <http://www.un.org/esa/agenda21/natlinfo/wssd/jordan.pdf>

⁸¹"The Aligned National Action Plan (NAP) to Combat. Desertification in Jordan 2015-2020", <http://www.unccd.int/ActionProgrammes/Jordan%20-%20eng%202015-2020.pdf>

⁸² Noted by S. Al-Sharari (2014) 'The Legal Framework for Environmental Protection in the Hashemite Kingdom of Jordan- Analysis of the Environmental Protection Law No.

52 of 2006' <http://dx.doi.org/10.5539/jpl.v7n3p8>; Khailah, Yacoub, & Al – Majali The National Centre for Human Rights (2010) ' The Right to a Health Environment in the Hashemite Kingd of Jordan – Executive Summary of the Study of The extent of the Compatibility of the National Legislations with the International Charters'

protect farmers. Serious disaster aversion cannot be dealt with by the Ministry of Agriculture alone, barring close collaboration between the two Ministries, there is a strong possibility that farmers may be overlooked in DRR plans.

Further, one of the more challenging tasks may include raising national and local awareness of the importance of the agriculture sector for climate change adaptation, and the opportunities for climate-smart agriculture to improve conditions.⁸³

To adopt adaptation measures and programs for the water sector

Water is the most pressing policy challenge in Jordan, including in relation to climate change adaptation and resilience and water storage has been a chronic problem for many years. Jordan's NDC objective of adopting adaptation measures and programs for the water sector includes the design and activation of measures related to groundwater protection, surface water development, demand management, and monitoring of water quality and quantity. These priorities are also underlined in significant Jordanian policy documents, including the National Adaptation Strategies and Plans, and the national budget.

Studies show that around 40% of water distributed to homes across the country is lost, affected by illegal wells and faulty pipes. According to the Ministry of Water and Irrigation (the "Ministry of Water"), water needs are going to exceed Jordan's resources by more

than 25%. In addition to inadequate investment in the sector, the legal and regulatory framework for water management is largely deficient. There is no specific law or regulation that creates incentives for private sector investment in wastewater treatment facilities and water management. Water resources in Jordan are directed towards four different sectors: agriculture, municipal supplies, industry, and tourism. By far, the largest user of the country's water resources is the agriculture sector, which uses roughly 60% of the total water supply, while 36% goes to municipal uses, and 4% for industry.

Legal and institutional enablers:

Several Jordanian laws, regulations and instruments serve to shape investments and other actions taken to achieve the NDC commitment to adopt adaptation measures and programs for the water sector. They include measures related to groundwater protection, surface water development, demand management and monitoring water quality and quantity. The most important laws are:

- Law No. 18 of 1988 Water Authority Law and related regulations
- Law No. 19 of 1988 as amended by the Law No. 3 of 2001 on the Jordan Valley Authority,⁸⁴
- The Environmental Law,
- Ground Water Monitoring Regulation and its amendments No. 85 of 2002 (the "Ground Water Regulation"),
- Instructions and Conditions for the Use of Wastewater,

⁸³ Al-fayad & Ajlouni (2006). Underutilized Species Policies and Strategies – Analysis of existing national policies and legislation that enable or inhibit the wider use of underutilized plant species for food and agriculture in Jordan. (Global Facilitation Unit of Underutilized Species).

⁸⁴ Jordan Valley Development Law as Amended by the Amended Law No. (30) for Year 2001 <http://www.jva.gov.jo/sites/en-us/Documents/Jordan%20Valley%20Development%20Law.pdf>

Treatment, Saltwater, and Wastewater for Agriculture Uses No. (7/g) of 2016 (the “Instructions”).

Water Authority Law

The Water Authority Law was enacted in 1988, and amendments have been made as of 2014. Article 3 of the Water Authority Law indicates that the Water Authority of Jordan (WAJ) is financially and administratively independent, with financial and administrative independence from the Ministry of Water and Irrigation (MWI), under which it sits. The WAJ has a broad range of powers similar to government ministries, including responsibility for development of water sources, wastewater, sanitation and sewage systems and to regulate the uses of water, prevent its waste and conserve its consumption.⁸⁵

MWI identifies three key policy instruments/priorities: wastewater, water irrigation and water demand management. Catalysing private sector investment is easier for some of these target areas at later stages of water management, such as investment in wastewater, but more difficult for irrigation. The policy on wastewater indicates that the private sector will take over operating infrastructure and services (build-own-operate or build-operate-transfer). The policy acknowledges that budgetary constraints limit the scale of the government’s investment yet declares that wastewater is a priority.⁸⁶

Law on the Jordan Valley Authority

The Jordan Valley Authority (JVA) has a socio-economic mandate to improve development and irrigation in the

Jordan Rift Valley.⁸⁷ This means that the JVA introduces societal perspectives to the governance of water to improve standards of living for Jordanians, in addition to its mandate to enhance economic development and consider the state of the environment. Indeed, Article 3 of the Jordan Valley Development Law of 1988 (amended as of 2001) encompasses all three sustainable development priorities: social, environmental and economic. Moreover, according to article 2 of the law, the JVA is responsible for developing, protecting, and exploiting water sources of the Jordan Valley for the purposes of irrigated agriculture, domestic use, power generation, settlement of disputes arising from the use of water resources, conducting studies to evaluate water resources in the Kingdom, and developing, protecting and improving the environment in the Jordan Valley as well as implementing all necessary works mentioned under this law. Furthermore, the Authority is also granted the right to benefit from all donations, loans and any other local financial benefits available for its business and projects. It also works on managing and maintaining the projects, however, the country still retain sovereignty over water sources obtained from any project. The JVA is given the right to sell or rent to any governmental interest or an institution any land or agricultural unit or housing unit under certain conditions stated under this law. The JVA also defines water pollution and applies sanctions and penalties on polluters.

⁸⁵ Water Authority Law No. 18/1988, Article 6.

⁸⁶ Ministry of Water and Irrigation ‘Waste Water Policy’ <http://www.mwi.gov.jo/sites/en->

[us/SitePages/Water%20Policies/Waste%20Water%20Policy.aspx](http://www.mwi.gov.jo/sites/en-us/default.aspx)

⁸⁷ ‘The Ministry of Water and Irrigation’ <http://www.mwi.gov.jo/sites/en-us/default.aspx>

Law for the Protection of the Environment

Article (4) of the Environmental Law gives wide authority to the Ministry to carry out the necessary tasks to protect all water sources from pollution, implement all international agreements and treaties related to environmental protection, supervise all energy projects, and perform controlling and monitoring functions.

Moreover, Article (9/a) of this law prohibits a person from disposing or burying any material, in water sources or water reservoirs, that may cause pollution, environmental harm, or alters water temperature. Part (b) of the same article, prohibits a person from disposing water waste in an area that is not specified by the Ministry or that contradicts with its terms and criteria. Articles 20 and 21 set out deterrent sanctions against any person who pollutes or cause pollution to any water resources whether intentionally or unintentionally, that could reach up to 10 million JDs and up to 15 years of imprisonment.

Selected water management investments and programmes

Jordan has launched and implemented several innovative projects in the water sector.⁸⁸ These include, for instance, the Red Sea – Dead Sea Water Project,⁸⁹ which seeks to secure Jordan's freshwater needs up to 2040, protect the environment of the Dead Sea from degradation, reduce dependence on over-abstracted existing underground freshwater resources to

prevent further depletion, and to establish a reliable and sustainable new source (desalination of sea water). It also includes the Disi Water Conveyance Project (which became operational in July 2013), several smaller freshwater harvesting projects in different areas, including the Al Wahda dam in the north, dams in Alkarak Governorate in the south, and many small dams in the Jordanian desert. Further, there are projects for the treatment of waste water, to institutionalize the reuse of waste water, the largest and most important of which is As-Samra Wastewater Treatment Plant.⁹⁰ These publicly-funded projects have been encouraged through innovative laws, strategies, institutions and standards.⁹¹

Legal and institutional barriers and opportunities:

Water scarcity, and issues concerning exploitation and management present challenges for Jordan's competent authorities. A considerable percentage of the water problem is due to the lack of regional cooperation. Palestine, Iraq and Syria are in conflict and share borders with the Kingdom of Jordan. Effects of the Syrian crisis have also taken a considerable toll on Jordan, which is already constrained to one of the lowest daily water allowances in the world.

Nonetheless, Jordan has also understood the opportunity that cooperation brings to improve sustainable water management. For example, to protect the important Disi

⁸⁸ Jordan's Water Strategy 2008-2022, http://www.mwi.gov.jo/sites/en-us/Documents/Jordan_Water_Strategy_English.pdf.

⁸⁹ Ministry of Water and Irrigation 'Red Sea – Dead Sea Water Project' <http://www.jva.gov.jo/sites/en-us/RSDS/default.aspx>.

⁹⁰ For more details please see, 'As-Samra Wastewater Treatment Plant (WWTP), Jordan' [\[technology.net/projects/as-samra-wastewater-treatment-plant-jordan/\]\(http://www.water-technology.net/projects/as-samra-wastewater-treatment-plant-jordan/\).](http://www.water-</p></div><div data-bbox=)

⁹¹ Jordan established a unit to reuse the recycled waste water within Jordan Valley Authority, please see <http://bit.ly/2kXk59o> and <http://bit.ly/2lkWxAd>

Basin, Jordan and the Kingdom of Saudi Arabia signed an Agreement on April 2015 to enhance the sustainable use of the Disi Basin water, with sound and careful management of the Basin's regenerative and storage capacities.⁹² Further cooperation would be beneficial.

Certain climate change challenges, as noted above with regard to other NDC priorities, are geographical and physical, rather than institutional or legal. For instance, rainfall irregularity and the expansion of the population (both naturally and in relation to refugee transitions) impact heavily on water management efforts. Most of the Jordanian groundwater aquifers are situated at the borders of the country, and this presents further difficulties in times of regional instability, affecting efforts to explore and exploit these aquifers.

Jordan's National Water Demand Management Strategy 2016 confirms that water usage in Jordan is not consistent with international best practices. This 2016 strategy is complemented by Jordan's new National Water Strategy (2016-2025), which highlights the need for reform in this area and states that water utilities must act more like businesses to use water more sustainably and for revenue-generation purposes.⁹³ The Strategy indicates that a new groundwater policy will be introduced, with stringent controls on the use of groundwater, abolition of free

abstraction and limits on the quantity that can be abstracted based on the aquifer safe yield. The Strategy also envisages the introduction of water resources protection legislation to legally implement water resources protection zones for drinking water. It further considers the adoption of water legislation that recognizes the human right to water and sanitation and explicitly prioritizes the allocation of water for personal and domestic use over other uses. Furthermore, the Ministry plans to introduce financial incentives for water conservation, such as rationalizing the pricing structure for water and wastewater services to provide strong incentives for economy of use above the threshold of a minimum daily requirement.

Current demand for water for irrigation is broadly recognized as highly unsustainable, and the rate of exploitation of groundwater resources is more than double their safe yield. In Jordan, it has been recognised that there is a pressing need for a new action plan to be developed in accordance with the Water Authority Law.

In addition to laws and policies that are not yet to international standards, a 2008 study that examined the powers of the Water Authority concluded that the WAJ and JVA did not have sufficient budgets, their authority overlapped with other ministries and laws were not being enforced. This study also found that water management deviated from

⁹² For more information see Ammon News (2014) ' Jordan: underground water on the verge of depletion' <http://www.ammonnews.net/article/192109> and, Agreement between the Government of the Hashemite Kingdom of Jordan and the Government of the Kingdom of Saudi Arabia for the Management and Utilization of the Ground Waters in the Al-Sag/Al-Disi Layer http://internationalwaterlaw.org/documents/regionaldocs/Disi_Aquifer_Agreement-English2015.pdf and also, Eckstein, G. (2015) ' The Newest Transboundary Aquifer Agreement: Jordan and Saudi Arabia Cooperate Over the Al-Sag /Al-Disi Aquifer'

<http://www.internationalwaterlaw.org/blog/2015/08/31/the-newest-transboundary-aquifer-agreement-jordan-and-saudi-arabia-cooperate-over-the-al-sag-al-disi-aquifer/>.

⁹³ See National Water Demand Management Strategy 2016 [http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20The%20Water%20Sector/National%20Water%20Strategy\(%202016-2025\)-25.2.2016.pdf](http://www.mwi.gov.jo/sites/en-us/Hot%20Issues/Strategic%20Documents%20of%20The%20Water%20Sector/National%20Water%20Strategy(%202016-2025)-25.2.2016.pdf)

international best practices because regulations were being issued by the same institution that provides services.⁹⁴ In addition, due to budgetary constraints, over time, the private sector is expected to become more involved in water irrigation policy, taking over from the JVA. Consequently, there may be significant investment opportunities with regard to the management of water irrigation infrastructure.⁹⁵

Further challenges affecting the implementation of Jordan's NDC priorities and initial recommendations

This section will capture cross-sectoral challenges that may hinder Jordan's successful achievement of its NDC priorities. These challenges include institutional barriers, the lack of an effective MRV system, financial deficit, insufficient investment incentives, environmental law reform, legal recourse and political instability.

In Jordan, inter-institutional conflicts persist in relation to jurisdiction over key environmental issues such as water, waste management, and energy. Jordan also suffers a chronic general budget deficit driven by several key factors including limited access to sustainable development of natural resources, especially in the energy sector, a marked dependency on external financial aid, and political instability in the Middle East region. These conditions adversely affect investment, slowing economic growth

and placing a heavy burden on Jordan's infrastructure and other developmental plans.

Institutional barriers

Institutional barriers can be overcome through concerted and targeted programmes on several levels. First, the Jordanian Parliament requires additional guidance and momentum to address climate change as a high priority in its agenda, to update, amend, and harmonize the relevant laws, regulations and standards. A high degree of coordination among different governmental bodies must be established and enhanced. The Ministry of the Environment may be the appropriate institution to lead in this coordination, backed by other important national institutions including the Head of State and the Finance Ministry. The current Environmental Law has established the legislative and institutional authority for this leading role for the Ministry of the Environment, in Article 3.⁹⁶

There may also be a need to establish a new Climate Change Unit or similar institutional arrangement within the Ministry of the Environment to set up, supervise, coordinate, and review all policies, measures and plans related to mitigation and adaptation to climate change. To maintain transparency and accountability, the proposed Unit should be established at the ministerial level rather than head of the state level in Jordan. This is because it can act as a technical back up to the Ministry of Environment on questions related to

⁹⁴ Hagan, R.E. (2008) 'Strategic Reform & Management Of Jordan's Water Sector' (USAID study) p. 14-15: https://usaidjordan.kmportal.com/system/resources/attachments/000/000/215/original/Strategic_Reform___Management_of_Jordan's_Water_Sector_-_Ross_Hagan.pdf?1450789042.

⁹⁵ Irrigation Water Policy <http://www.mwi.gov.jo/sites/en-us/SitePages/Water%20Policies/Irrigation%20Water%20Policy.aspx>.

⁹⁶ Article 3 reads as follows "A- the Ministry is deemed the competent party to protect the Environment in the Kingdom and the official and public bodies shall execute the instructions and decisions issued by virtue of the Law and the regulations issued by virtue thereof, at the risk of legal liability as provided for herein and in any other legislation. B- The Ministry is deemed the competent reference at the national, regional and international levels as regards all environmental matters and affairs, in cooperation and coordination with the competent parties".

climate change and thereby strengthen this Ministry. This could follow the examples of Qatar and Morocco, which have also established such dedicated departments to strengthen the governance of climate change at the national level. It might consist of representatives from governmental and non-governmental bodies, and act as a focal point for interactions and agreements with international institutions, investors, donors and others in relation to the achievement of the country's NDC, the reduction of GHGs and other aspects of Jordan's climate change strategies.

Monitoring, reporting and verification

The proposed Climate Change Unit may be well placed to assign responsibilities in relation to MRV, as in Qatar. Jordan recognizes that a fundamental need in its current climate change legal framework is to design an effective MRV system to “measure, report, and verify” Jordan's emissions, commitments and actions. To date, Jordan has established a national greenhouse gas inventory, as part of its 2nd National Communication to the UNFCCC, and needs to work to develop this inventory further in cooperation and coordination with the emitters, especially in the private sector.⁹⁷

In its NDC, Jordan has committed to put in place a functioning MRV system, including a GHG inventory to track mitigation progress, based on an appropriate institutional and technological foundation. Effective MRV systems both on macro level and on sectoral and activity levels are highly needed. To implement an effective MRV system, Jordan needs to introduce certain provisions in its

Environmental Law and to assign institutional responsibility for the proposed MRV system: either to the Ministry of the Environment, or to the proposed Climate Change Unit. These responsibilities include:

1. Data collection, classification, processing, and management.
2. Communication with decision-makers at the national level, and with international organizations, donor, and investment entities.
3. Ensuring data is available for decision-makers and researchers.

The law should also provide for a duty to disclose, to ensure transparency and accuracy. A system of incentives and penalties should support this disclosure duty.

Financial deficit

To address the chronic barriers to investment and other budget issues, there are several key considerations that can help Jordan to meet the financial requirements necessary to adapt to climate change and fulfil its national and international environmental commitments. For instance, there may be a need to adopt new measures that can assist investors and other stakeholders to maximize the benefits from existing natural resources – such as tax exemptions and one-stop-shops for licenses and permits - and to develop new alternatives where appropriate, in order to overcome existing financial barriers.

Investment incentives

Jordan has established its Investment Commission (JIC) to attract, encourage

⁹⁷ The National Climate Change Policy and Sector Strategic Guidance Framework of the Hashemite Kingdom of Jordan (2013-2020), available online at:

http://www.moenv.gov.jo/AR/PDFs/Climate%20change%20policy_PDF.pdf

and facilitate investments in crucial sectors i.e. energy, agriculture, industry and tourism. The JIC was formed by Investment Law No. (30) in 2014.⁹⁸ Article 20 indicates that the JIC is associated with the Prime Minister and its executives are appointed by the Council of Ministers. The official materials and mandate of the JIC identify many promising investment opportunities related to the renewable energy sector.⁹⁹ However, the JIC's work should be further strengthened in its essential efforts to promote more sustainable development, linking their authority, capacity to comply with existing regulations and standards, and programmes to new NDC commitments backed by the necessary climate change institutional bodies, and to the new global Sustainable Development Goals.

In order to encourage green investments in different sectors, Jordan is discussing the introduction of a unified legal framework to attract and protect investments through financial incentives and judicial guarantees. For example, experts recommend introducing financial incentives, such as loan guarantees to reduce the risk of borrowing. At the moment, investment incentives are often sectorally based. For example, in the agricultural sector, the Agricultural Credit Corporation

provides financial services and loans to farmers. To green its investment portfolio, it could be required to attain a minimum threshold of green investment loans.

Jordan has signed a free trade agreement with the United States of America,¹⁰⁰ and an association agreement with the EU.¹⁰¹ Both have environmental obligation requirements, which may help prioritise environmental cooperation and mutually supportive trade, investment and environmental policies and activities, within the economic process.¹⁰² Jordan is also a party to the Energy Charter Treaty, an international agreement which establishes a multilateral framework for cross-border cooperation in the energy industry, including issues such as energy efficiency. The Treaty provides significant protection to investors, including protection from political risks involved in investing in a foreign country such as expropriation or nationalisation.¹⁰³

In this context, Jordan also seeks to secure higher levels of investment from international partners, both financial support (loans, aids, direct and indirect investments) and also technical assistance (knowledge transfer, training, capacity building). Such

⁹⁸ Jordan Investment Commission
<https://jic.gov.jo/portal/en/about>.

⁹⁹ Jordan Investment Commission 'Energy'
<https://jic.gov.jo/portal/Services/JordanInvestmentCommission/Energy>

¹⁰⁰ Jordan – United States of America Free Trade Agreement (2000) <https://ustr.gov/trade-agreements/free-trade-agreements/jordan-fta/final-text>.

¹⁰¹ Euro-Mediterranean Agreement establishing an Association between the European Communities and their Member States, of the one part, and the Hashemite Kingdom of Jordan, of the other part
http://eeas.europa.eu/delegations/jordan/documents/eu_jordan/eu_jordan_assoc_agrmt.pdf.

¹⁰² The Jordan-USA FTA was heralded at the time, due to the inclusion of environmental provisions were included in the main text of the Agreement. In Article 5, both Parties agreed not to lower environmental or labour standards to promote trade. Such provisions are now commonplace in

FTAs, designed to avoid a "race to the bottom" whereby environmental standards may be relaxed to attract trade and foreign investment. Investment and trade that supports sustainable development and national priorities such as those expressed in Jordan's NDC can be encouraged through the FTA. See also 'US-Jordan FTA' (Bridges 4:41, ICTSD, October 2000) <
<http://www.ictsd.org/bridges-news/bridges/news/us-jordan-fta>. accessed 13 September 2016. Jordan's Association Agreement with the EU also requires, at Article 60, that "conservation of the environment and ecological balance be taken into account in the implementation of the various sectors of economic cooperation to which it is relevant". The Agreement also encourages regional cooperation on environmental issues (Articles 62 and 65).

¹⁰³ International Energy Charter (2015)
<http://www.energycharter.org/process/international-energy-charter-2015/overview/>

external investment must be administered carefully.

Equally, Jordan must gradually find ways to maintain its own financial needs by controlling the public budget and setting a moderate environmental taxation program. Public expenditures are high in Jordan, but there may be an opportunity to include green fiscal policy measures as part of the efforts to reduce Jordan's public spending. This includes improving transparency and efficiency of taxation, as well as re-assessing tax exemptions. For example, reviewing the activities that receive tax breaks could increase tax revenue while incentivising local growth, if tax exemptions for high carbon activities are reduced and tax exemptions for activities with high environmental and economic performance increased. Therefore, 'environmental taxes' could be based on both environmental impacts and value added to the economy.

Environmental law reform

The 2017 amendments to the Environmental Law introduced definitions of climate change. Article 4/c of this law stipulates that the Ministry shall perform the coordination of national efforts to predict the climate change process and limit GHG and enhance mitigation efforts. In order to improve mainstreaming of climate change issues, a full assessment of the new law and its implementing regulations to address climate change challenges should be conducted.

Legal recourse

In terms of legal recourse, there are several avenues which can be taken through the courts and other administrative procedures in case the government, local authorities or other actors do not comply with the law. The principal mechanism for dispute resolution is to be found in the Law of Civil Procedures No. 24/1988, as amended,¹⁰⁴ which provides for ordinary process of litigation and traditional remedies. However, parties can agree to settle their disputes through arbitration according to the Jordanian arbitration law in force.¹⁰⁵ Generally, Jordan has not chosen to create a special litigation process for the disputes related to investments, nor are there particular processes set in place for disputes that arise from investments on renewable energy or low emissions projects. No significant cases are reported in this regard, however, the Jordanian judiciary, backed by political will, have the potential to support private low-carbon investments. That being said, enforcement of green legislation should be improved.¹⁰⁶ This could be achieved by supporting Ministry of Environment staff who have Judicial Police authority (authority to conduct criminal investigations and provide assistance to the public prosecutor's office), which enables them to monitor and inspect environmental elements in the country, and providing judges with appropriate training and resources to consider environmental cases.¹⁰⁷

¹⁰⁴Law of Civil Procedures no 24/ 1988 as amended, <http://www.lob.gov.jo/AR/Pages/AdvancedSearch.aspx>.

¹⁰⁵Jordanian arbitration law no 31/ 2001, <http://www.lob.gov.jo/AR/Pages/AdvancedSearch.aspx>.

¹⁰⁶ Vivid Economics (2013) 'Study of mechanisms to incentivize the financial sector to scale up financing of green investment in Jordan'. Adam Smith International. pp 5-6 [http://www.vivideconomics.com/wp-](http://www.vivideconomics.com/wp-content/uploads/2015/03/Jordan_Green_Investment_Final_Report_English.pdf)

[content/uploads/2015/03/Jordan_Green_Investment_Final_Report_English.pdf](http://www.vivideconomics.com/wp-content/uploads/2015/03/Jordan_Green_Investment_Final_Report_English.pdf).

¹⁰⁷ Al-Sharari, S. (2014) 'The Legal Framework for Environmental Protection in the Hashemite Kingdom of Jordan Analysis of the Environmental Protection Law No. 52 of 2006' *Journal of Politics and Law*; Vol. 7, No. 3 www.ccsenet.org/journal/index.php/jpl/article/download/39769/22056.

Political stability

Political stability in the region, of course, remains a significant challenge overall. Jordan is contributing its best efforts to assist in stabilizing and addressing current tension in the Middle East by calling for peace and cooperation among the neighbouring countries. However, the situation

Legal and Institutional Framework for Implementation of Tunisia's NDC

Tunisia's NDC: legal status and priority sectors

The Paris Agreement was signed by the government of Tunisia on 22 April 2016, and ratified on 10 February 2017 through the organic law No. 72 of 2016.¹⁰⁸ With ratification, the Paris Agreement has entered into domestic law and has "a higher value than laws".¹⁰⁹

The NDC of Tunisia has no binding legal status of its own. The NDC was prepared by an Ad Hoc Committee of the Ministry of the Environment and Sustainable Development, and it is possible that this Committee will be responsible for the coordination of its implementation. The Ad Hoc Committee is not yet formally part of the Ministry of the Environment, and questions remain regarding the modalities being considered to secure efficient and effective implementation of the NDC. Nonetheless, several specific commitments arising from the NDC of Tunisia have been legalized domestically, and are already operational, as explained below.

continues to worsen and Jordan continues to struggle with a huge humanitarian issue, which affects every aspect of life in the Jordanian national agenda. The UN and the international community do understand the adverse effects of such explosive situations, and intensify their efforts to assist in stabilizing the region.

In its NDC, Tunisia aims to reduce GHG emissions by lowering its carbon intensity by 41% by 2030, relative to the base year 2010. Tunisia plans to achieve this target principally through five Nationally Appropriate Mitigation Actions (NAMAs): forestry, cement, electricity, sanitation, and buildings. Tunisia seeks to reduce its carbon intensity by 13% unconditionally through domestic efforts and, conditionally, by an additional 28%, dependent upon the financial support of the international community, as well as capacity building and technology transfer. Tunisia is seeking a total of USD17.5 billion in investment, and will provide nearly USD1.75 billion direct budgetary support towards the NDC priorities.

The priorities outlined in Tunisia's NDC are promising and ambitious targets. Energy, manufacturing and waste, and transport are the three sectors that emit the most GHG emissions in Tunisia. For example, the energy sector accounts for 75% of total emission reductions projected in the NDC, and these energy sector reductions are intended to reduce carbon intensity by 46% compared with 2010, by 2030. Mitigation measures in the waste sector are expected to make the second largest contribution to GHG emissions reductions. Agriculture and water are the two sectors most at risk from

¹⁰⁸ Paris Agreement – Status of Ratification: http://unfccc.int/paris_agreement/items/9444.php.

¹⁰⁹ Article 20 of the Constitution states: "International agreements approved by the assembly and ratified are superior to laws and inferior to constitution." In essence, in

the event of any conflict between a national law and an international convention ratified by Tunisia, the terms of the agreement outweigh the terms of the law. This corresponds to a traditional monist position of Tunisia to be respectful of international law before its own laws.

climate change, requiring adaptation measures.

Tunisia's NDC focuses on four key areas: (i) renewable energy resources; (ii) energy efficiency; (iii) adaptation and mitigation through changes in Agriculture, Forestry and Other Land Use (AFOLU); and (iv) water/waste management, which includes GHG emissions reductions through reforms to water resources management, manufacturing waste and transport. Further, the NDC key priorities are aligned to existing targets and commitments, and aim particularly to encourage investment in these specific economic sectors. The NDC priorities, and the domestic measures that support them, aim to send signals to international investors seeking opportunities for low GHG emission, climate-resilient development.

Political context in Tunisia

Although Tunisia recently adopted a new Constitution and has undergone peaceful political transitions, the country still faces challenges post the 2011 revolution, including: declining growth, investment, tourism revenues and services; rising unemployment, debt and inflationary pressures, trade and budget deficits; weaker exports, challenges for the balance of payments, depreciation of the dinar and deterioration of the sovereign debt rating. However, as indicated by the granting of the 2015 Nobel Peace Prize to the Tunisian National Dialogue Quartet for "its decisive contribution to the building of a pluralistic democracy in Tunisia in the wake of the Jasmine Revolution of 2011," the Arab Spring is still present in Tunisia five years after the revolution, and democracy is an important guarantee for business and investments.

Considerable legislative and institutional support is in place to address the comprehensive mitigation strategy adopted in Tunisia's NDC, focusing on key opportunities for emissions reductions in the four priority areas. While there are few laws that have been enacted exclusively as a mechanism to address climate change threats and opportunities in Tunisia to date, several overarching strategies and policies, as well as sector-specific laws and regulatory frameworks, supported by institutional mandates and standards, contribute to achieving NDC commitments.

The Constitutional order of Tunisia provides strong foundations for the elaboration and implementation of the country's NDC. The importance of making a "contribution to climate security" is highlighted in Paragraph 5 of the Preamble and Article 45. It is a solemn requirement that puts an end to the conflict between environment and development. Moreover, Article 102 expresses the right to a clean environment, which is protected by two independent constitutional bodies established under Articles 128 and 129; a "Forum of Human Rights" and a "Forum on Sustainable Development and the Rights of Future Generations". The creation of these institutions, read in conjunction with obligations upon the State to realise and respect environmental rights and contribute to climate security, provide the strongest – albeit also the most general – possible foundations in Tunisian law for the implementation of the country's NDC.

Tunisia's National Plan 2016-2020's strategic direction has confirmed this constitutional imperative by identifying challenges to the sustainability of development, and developing innovative responses, some of which

are highlighted in the legal analysis below.

The head of the government, appointed on 3 August 2016, announced that sustainable development is one of the five priorities of its policy roadmap. This framework incorporates elements of the "Carthage Pact", initiated by the President and signed on 13 July 2016 by nine parties and three national organizations. Priorities for sustainable development that were highlighted in this pact include: energy, water resources, agricultural land management, waste treatment and support for local environmental authorities. Tunisia finds itself in an important national moment of consensus and engagement, which might provide significant momentum for action on climate change and sustainable investment.



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NDC priorities

To increase use of renewables in Tunisia from 4% in 2015 to 30% in 2030

Tunisia has adopted very ambitious renewable energy objectives. According to their NDC, Tunisia plans to increase the share of renewables in their grid from 4% in 2015 to 30% in 2030. An increase in electricity generation from renewable sources is not only important for Tunisia's

commitments under its NDC with regard to GHG emission reduction targets, but will also help to reduce the worsening energy deficit in Tunisia, due to declining fossil fuel reserves, which has resulted in significant import costs.

The NDC priority accords with Challenge No. 7 of Tunisia's National Plan 2016-2020, which aims to rationalize energy consumption and promote new and renewable sources of energy. To this end, an ambitious Tunisian Solar Plan (TSP) has been developed which forms part of Tunisia's contribution to the implementation of the Mediterranean Solar Plan. The TSP was created in 2009 to coordinate the launch of energy consumption rationalisation programmes in Tunisia. Forty energy sector projects were to be implemented from 2010 to 2016. These should have included twenty-nine projects led by foreign businesses representing a total investment of €1.39 billion and an increase in the share of renewable energy in the electricity production mix from 1% in 2010 to 16% in 2016. The TSP emphasised the potential of PPPs, particularly with foreign investors. Revised in 2012 to a longer time period, the TSP now mirrors the NDC aim to achieve a total renewable energy penetration target of 30% of the Tunisian electricity generation mix by 2030. In 2016, only 6% of electricity production was from renewable energy sources.

Legal and institutional enablers:

There are three important Tunisian laws that are relevant to the increased use of renewable energy:

- the Law on Electricity Generation from Renewable Energies of 11 May 2015,
- the Law on Air Quality of 4 June 2007, and

- the Law on Energy Management of 2 August 2004, as amended in 2009.

Law on Electricity Generation from Renewable Energies

The Law on Electricity Generation from Renewable Energies establishes the terms and conditions for electricity generation from renewable energy sources and includes self-generation,¹¹⁰ local consumption and export. It mandates the Ministry responsible for energy to develop a national plan for electricity generation from renewable energy sources, based on national electricity needs and considerations of connecting to the electricity network.¹¹¹ It also aims to boost private sector investment and liberalise the regulation of the network, to facilitate private sector production of renewable energy.

For producers of renewable energy intended primarily for self-consumption (self-generation), excess electricity is purchased exclusively by the centralised connection, transmission and distribution body, the Tunisian Electricity and Gas Company (la Société tunisienne de l'électricité et du gaz 'STEG').¹¹² There are, however, faults in this design.

For producers of renewable energy for local consumption, contracts are approved in line with recommendations of the Technical Commission to the Assembly of People's Representatives and must be in accordance with an annual review setting national renewable energy needs from the Minister of Energy. Procedures for submission of applications for electricity

production from renewable energies are set by government decree. In addition, the purchase prices are set and revised periodically by order of the Minister of Energy. Significant power is placed in the hands of STEG, to set tariffs and contract terms, which are published in implementing decrees (firstly in draft form).

For renewable energy projects that produce electricity in excess of the maximum local needs (as determined in the annual review), the Law includes an open tendering process carried out under principles of competition, transparency and equal opportunity, based on the national law on granting concessions by the state.¹¹³ The same competition principles apply to renewable energy projects where the energy is destined for export.¹¹⁴ The exports scheme is based on concession contracts.

Finally, the Law on Electricity Generation from Renewable Energies also provides a framework for developing priority development zones for renewable energy projects. This will be important as procedures for acquiring and registering land are complex for national and international investors, and significantly increase the transaction costs of a project.

The draft Law was amended before its promulgation in 2015 following a Tunisian Constitutional Court decision. The Court decision determined that the draft Law, as written, was unconstitutional and required re-drafting to bring it line with Articles 12 and 13 of the Constitution concerning transparency in investment contracts

¹¹⁰ The auto-generation scheme is eligible to an entity or group operating in the industrial, agricultural or tertiary sectors and allows wheeling of the energy through the medium voltage (MV) or high voltage (HV) grid. The installed capacity cannot exceed the capacity subscribed by the producers from STEG.

¹¹¹ Article 3.

¹¹² Articles 3 and 11.

¹¹³ Article 13.

¹¹⁴ Article 24.

linked to natural resources. Consequently, additional procedures on the tendering and approval processes for renewable energy projects were added. The Court decision also reiterated the requirement to promote fair competition and transparency in private investment in renewables, which were reflected in the current Law.

Law on Energy Management

The Law on Energy Management, as amended in 2009, establishes the conditions for renewable energy by self-generation and selling off its surplus to STEG. Similarly to provisions of the Law on Electricity Generation from Renewable Energies, Section 14 states that “Any entity or group of entities operating in the industrial, agricultural or tertiary sector and which produces electricity from renewable energy sources for its own consumption shall be entitled to transmit the electricity so produced via the national electricity network to its points of consumption and to sell any surplus exclusively to STEG subject to certain upper limits under the terms of a standard contract approved by the regulatory authority for the energy sector.” This article establishes the means for aggregation of small renewable energy producers, although in practice this provision has been difficult to apply, as will be seen in the following section.

Several tax incentives are available to support both renewable energy generation and energy efficiency. They include reduced customs duties and VAT exemptions for energy efficient or renewable energy equipment and products that are locally manufactured

or imported, provided no similar equipment is manufactured locally, or where the products are inputs into the production of equipment used in the field of energy efficiency or renewable energy.¹¹⁵ The National Agency for Energy Conservation (Agence nationale de maîtrise de l'énergie 'ANME') also provides energy efficiency and renewable energy projects with a range of premiums once the project is running, in the form of refunds.¹¹⁶ For example, ANME will refund 30% of initial investment costs for solar thermal water heaters in the industrial and service sectors.

An Energy Transition Fund is also being established by ANME to assist in incentivising renewable energy investments. The Fund is to provide integrated funding solutions for renewable energy investments, including subsidies, subsidised loans, subsidies on commercial loans and capital financing for firms operating in renewables.¹¹⁷

Law on Air Quality

The Law of 4 June 2007 on Air Quality establishes a national air quality monitoring network, and seeks to strengthen the contribution of strategic planning towards the minimisation of air pollution and climate change emission reductions. The main institutions that ensure the implementation of this Law are the ANME and National Agency for the Protection of the Environment (Agence nationale de protection de l'environnement 'ANPE'). These institutions are responsible for reviewing emissions standards and setting limits on the emission of certain pollutants, in accordance with the objectives of the National Sustainable

¹¹⁵ Decree 2010/1521 on Tax exemptions for the import of renewable energy and energy efficiency equipment materials.

¹¹⁶ Decree 2009/362 on Renewable Energy and Energy Efficiency Premiums.

¹¹⁷ Agence Tunis Afrique Presse (2016) 'Energy Transition Fund to be operational early next year' <http://www.tap.info.tn/en/Portal-Top-Slide-EN/8492147-energy-transition-fund-to-be>

Development Strategy and the Strategic Policy Plan 2016-2020 and the Tunisian Solar Plan.

Selected energy sector investments and programmes

Tunisia receives significant support for renewable energy from international development actors such as Gesellschaft für Internationale Zusammenarbeit (GIZ), Agence Française de Développement (AFD) and the International Renewable Energy Agency (IRENA). Germany, Tunisia's main partner in clean energy, through one of its development banks, the kfW, has announced a loan of USD 124 million for renewable energy development.¹¹⁸ In spite of these promising steps, access to sufficient levels of investment for renewable energy remains challenging¹¹⁹ and the Tunisian Energy and Mines Minister stated in July 2016 that his country requires USD 7 billion to reach its green energy goals, including sourcing 30% of its electricity from renewable energy sources by 2030. Further, Tunisia lacks the grid capacity and infrastructure necessary to support its green energy goals.¹²⁰ Tunisia is part of the DESERTEC super-grid project, which seeks to connect power from Africa's vast solar resource to European countries, to harness and distribute renewable power.¹²¹

Legal and institutional barriers and opportunities:

The total installed capacity of renewable energy was an estimated 312 MW in early 2016, amounting to only 6% of the total capacity.¹²² Moreover, it is estimated that renewable energy accounted for only 1% of total energy consumption in 2014. Interestingly, the price of residential photovoltaic (PV) systems in Tunisia has only decreased by 27% in the last 6 years, compared to an international price decrease of 40%. This situation suggests a lack of competition and transparency in the Tunisian energy sector, although it is expected that the Minister of Mines, Energy and Renewable Energy appointed in August 2016 will seek to address such concerns.

Legal and institutional barriers to a greater uptake of renewable energy projects in Tunisia include the lack of a clear national policy framework, low energy tariffs, and a deficient legal and regulatory framework, including complicated administrative procedures, lack of transparency in setting tariffs, the monopoly position of the Tunisian Electricity and Gas Company (STEG) and ad hoc contracting. Each barrier will be reviewed in more detail below.

Tunisia needs clear action points for all stakeholders that can be monitored to know whether Tunisia has achieved its renewable targets, either of the Tunisian Solar Plan or the country's NDC. Alongside legal reform, a National Renewable Energy Action

¹¹⁸ 15 July 2015, 'Tunisia's renewables makeover to cost USD 7bn' <http://renewables.seenews.com/news/tunisia-renewables-makeover-to-cost-usd-7bn-532704>

¹¹⁹ UNDP (2014) Tunisia: Derisking Renewable Energy Investment. New York, NY: United Nations Development Programme.

¹²⁰ Renewable Energy World (2011), 'Renewable Energy Recap: Tunisia',

<http://www.renewableenergyworld.com/articles/2011/12/renewable-energy-recap-tunisia.html>

¹²¹ DESERTEC (2016) <http://www.desertec.org/>

¹²² Bridle, R., Kiston, L. and Wooders, P. (2014) 'Fossil-Fuel Subsidies: A barrier to renewable energy in five Middle East and North African countries' IISD <http://www.iisd.org/gsi/sites/default/files/fossil-fuel-subsidies-renewable-energy-middle-east-north-african-countri%20%20%20.pdf>.

Plan (NREAP) could establish action points for both government and private sector actors, as well as improved monitoring and transparent data collection. This could help instil greater confidence in both policy makers and investors on Tunisia's policy direction.

Subsidised electricity prices make it difficult for renewable energies to compete. Existing levels of subsidies are unsustainable, not just for the uptake of renewable energies, but also for Tunisia's budget as a whole. The current framework for the award of subsidies remains opaque, and should be an area for institutional and budget reforms. According to the IMF, in 2012, energy subsidies amounted to USD 980 million (2.8% of Gross Domestic Product (GDP)).¹²³ This represents a significant increase since 2005, despite calls by the Minister responsible for industry in 2014 for drastic cuts in subsidies and an increase in energy prices.¹²⁴ Current subsidies include those provided to STEG to offset its deficits. STEG's losses are in large part due to the difference between retail price (kept low via regulated power tariffs) and the cost of generation and transmission.¹²⁵ Broader budgetary constraints impede the award of market-based incentives, such as feed-in-tariffs (envisaged in the 2015 Law, but not yet detailed), that might support

and intensify efforts to promote private and individual adoption of renewable energy.

The administrative procedures on renewable energy are also complex. The 2015 Law on Electricity Generation from Renewable Energies and its implementing decree of 24 August 2016 disincentivise private investment, as the administrative procedures are cumbersome, complex and slow,¹²⁶ and add to the other administrative authorizations required by existing laws.¹²⁷ In addition, investors are not given adequate guarantees of their project's approval during the project's lifetime¹²⁸ or in case of dispute.¹²⁹ To encourage private investments, the simplification of procedures needs to be prioritised. For example, currently, requirements for the development and operation of a facility are derived from a diversity of legal regimes that govern the production of electricity, including renewable energy. The terms used are not always sufficiently defined, and interpretation of the provisions may differ from case to case.

The overarching policy objectives expressed in the Tunisian Solar Plan and the NDC priorities for Tunisia have not yet been sufficiently articulated in the relevant laws. The Law on Electricity Generation from Renewable

¹²³ Bridle, R., Kiston, L. and Wooders, P. (2014) 'Fossil-Fuel Subsidies: A barrier to renewable energy in five Middle East and North African countries' IISD <http://www.iisd.org/gsi/sites/default/files/fossil-fuel-subsidies-renewable-energy-middle-east-north-african-countries%20%20%20.pdf>

¹²⁴ (2014) Tunisie: Une augmentation attendue de 7% des prix de l'électricité et du gaz en 2015 <http://directinfo.webmanagercenter.com/2014/11/30/tunisie-une-augmentation-attendue-de-7-des-prix-de-lelectricite-et-du-gaz-en-2015/>.

¹²⁵ Börner, A. and Sebai, M. (2015) 'Aspects of Energy in Tunisia' Renewable Energy Law and Policy Review Volume 6, Issue 3 (2015) pp. 228 – 235.

¹²⁶ There is a provisional approval requiring a set of formalities (Article 15) and a definitive approval after the execution of the other formalities (Article 30). Following Article 19 of the 2015 Law, the authorization is given in a normative manner and does not bestow an exclusive right on the beneficiary. Title 2 of the implementing Decree

relates to the granting of authorizations. Together with Article 30, it requires the *Société* (company) to request the Minister of Energy's authorization for the production and sale of electricity.

¹²⁷ Article 46 of the implementing Decree determines that the granting of prior approval and definitive approval does not exempt the company from the requirement to obtain other administrative authorizations.

¹²⁸ In accordance with Article 33 of the Decree it is possible to extend the authorisation once for a maximum of 5 years.

¹²⁹ Following the last paragraph of Article 34, the Minister in charge of Energy can, in certain circumstances, withdraw the authorization without compensation. In addition, an opportunity to give its assent is planned in case of a dispute between the investor and the *Société tunisienne d'électricité et de gaz* (STEG) relating to the execution of the project. The Minister in charge of Energy has the authority to make the final decision.

Energies focuses on national security and sovereignty objectives, rather than on climate change imperatives and opportunities. In fact, this Law and its associated Implementing Decree resemble the laws that govern hydrocarbons, without a clear priority on renewable resources.

Progress in securing legal reforms has been challenging, uncertain and difficult at times. IPP schemes were introduced to Tunisian laws in April 1996 through Law No. 96-27, which allowed for electricity generation by private authorities and reduced the monopoly of STEG. The IPP law theoretically encourages the development of renewable energy projects, but none have materialised as the IPP tender scheme is rigid. To function effectively, Law No. 96-27 demands a thorough review and significant changes. Moreover, IPP contracts are awarded and negotiated on a case by case basis. The lack of a standard form contract further contributes to uncertainty and investment risk. The development of template power-purchase agreements (PPAs), technical codes and standard form contracts that set out rules for grid access, might help to alleviate these risks.

Some reform has been achieved with the Law on Electricity Generation from Renewable Energies of 2015; however, this reform is limited, and this Law does not yet provide sufficient incentives for private investments. The financial incentives are provided for in Decrees, and are not enshrined in legislation. In addition, in the case of self-generation, the tariff rate at which STEG will purchase excess electricity is set at a maximum rate, determined by STEG.

This creates a lack of certainty of the tariff amount and raises concerns that the tariff rates are not set by the regulatory authority. In addition, the producer of electricity for self-supply is responsible for all expenses related to connection to the national grid.¹³⁰ Network connection charges may be a significant cost for the investor and may reduce the competitive edge, particularly if network expansion is required. It is unclear if the investor can recover these grid connection costs through the tariff paid by STEG.

The law does not provide for transparent processes of tariff setting by STEG. Although STEG is required to purchase all electricity generated, it is at a sales price determined by STEG, although advertised and known in advance. Future reform could establish a more transparent process, including standardised criteria, for determining the price to be paid for electricity from renewable energy sources. Tunisia should place a strong focus on transparency in regulatory instruments and pricing arrangements, to foster more private investment.

Furthermore, the Law does not enforce the creation of a truly independent energy authority for the electricity sector. Although ANME has been created as the national coordinator of energy management policy, is not a true regulator. It is not responsible for setting wheeling rates, setting the feed-in-tariff, nor adjudicating on possible conflicts between STEG and IPPs. Instead, the law only bestows ANME with an arbitration authority, with its role limited to examining possible disputes recorded in the implementation of projects.¹³¹

¹³⁰ Article 8.

¹³¹ Chapter 5, Article 45 of the draft Decree to implement the Law on Electricity Generation from Renewable Energies.

The independent production of electricity from renewable energy for local consumption is also subject to legal and institutional barriers. Similarly to self-generation, all electricity generated from renewable sources or otherwise is exclusively sold to STEG. As a government monopoly, with the mandate to produce, transport, and distribute electricity, STEG has every reason to try and maintain this position. As the main supplier of energy in the country, STEG stands to potentially lose part of its local production to private renewable energy developers. However, project developers need to negotiate with STEG, which creates a conflict of interest. The fact that STEG decides whether new plants are needed, what rates to set, and can even affect performance and reliability of IPPs, all skew the balance of power in favour of STEG and places significant obstacles in front of potential private developers. Therefore, while STEG is the main proponent of renewable energy investment, it is simultaneously its main barrier.

Another example of an ineffective law that seeks to encourage private energy generation is that concerning an aggregation of Tunisian cement companies that sought to join together to produce electricity. ('Aggregation' is when groups of customers are interested in participating jointly in self-generation projects.) Ambiguities in the 2009 Law on Energy Management, such as the requirement to provide an extract from the commercial register of the company, necessarily preclude the operation of aggregation in practice, as there is no commercial

register/company for an aggregated group.¹³² The 2015 Law on Electricity Generation from Renewable Energy did not sufficiently address this issue, rendering the Decree less effective.

The 2015 Law on Electricity Generation from Renewable Energy introduces a maximum allowed capacity for electricity generation projects for local consumption: 5MW for solar PV projects, 10MW for solar thermal, 30MW for wind and 15MW for biomass.¹³³ These are low maximum installed capacity limits, compared to international standards, resulting in disincentives for international investors. No minimum capacity is determined, leading to uncertainty. The maximum capacity should be revised upward and the minimum capacity specified.

To promote energy efficiency in all sectors (industrial, building, transport and agricultural) to decrease primary energy demand by 30% by 2030

Legal and institutional enablers:

Measures to promote energy efficiency via rational energy use, alongside the generation of renewable electricity, have been part of Tunisia's legislative landscape since 1985 and have taken on an increased importance since 2000, when Tunisia became a net electricity importer.¹³⁴ This is reflected in policies that focus on energy

¹³² Decree No. 2009-7 of 9 February 2009 on the transport of renewable energy, auto-generation (self-supply) and sale of its surplus to STEG.

¹³³ Law No. 2015-12 dated 11 May 2015 on electricity generation from renewable energies, Art 16.

¹³⁴ Rocher, L and Verdeil, E. (2013) Energy Transition and Revolution in Tunisia: Politics and Spatiality. The Arab World Geographer, 2013, 16 (3), pp.277-298:

<https://halshs.archives-ouvertes.fr/hal-01078983/document> and 'Introducing Thermal and energy requirements standards in Tunisia' http://www.ffem.fr/jahia/webdav/site/ffem/shared/ELEMENTS_COMMUNS/U_ADMINISTRATEUR/5-PUBLICATIONS/Changement_climatique/Plaquette_Tunisie_ReglThermique_GB.pdf.

efficiency. The Tunisian Solar Plan includes the voluntary adoption of energy efficiency measures over the period 2013-2020 to result in an average reduction in the demand for electricity of 1.4% per year compared to a business-as-usual scenario. Tunisia's National Energy Conservation Action Plan succeeded in contributing to an annual decrease of 2% in energy intensity, following an awareness raising initiative between 2000 and 2013.¹³⁵ Since 2000, Tunisia has reduced its energy intensity by 20%, and in 2013, was ranked first in the Arab Future Energy Index (among 13 assessed countries) in terms of energy efficiency.¹³⁶

The Ministry of Industry and Technology (MIT) is responsible for energy matters and the National Energy Efficiency Agency (NEEA), created in 1985, is responsible for implementing government measures related to renewable energy and energy efficiency, including the Tunisian Solar Plan. Tunisia has a comprehensive framework for promoting energy efficiency, deploying a range of measures that include regulatory, tax and financial incentives. The following section focuses on the laws relevant to achieving Tunisia's NDC priority to promote energy efficiency, and decrease primary energy demand by 30% by 2030. Energy efficiency investment and projects in Tunisia are governed primarily by the following laws:

- the Law on Energy Efficiency of 2 August 2004, amended in 2009 (Law No. 2004-72),

- the Law of 2 August 2004 on Energy Management,
- the Law on Air Quality of 4 June 2007,
- the Finance Acts of 1992 and 2013, and
- *Decree No. 2009-2617 of 14 September 2009.*

The Law on Energy Efficiency

The 2004 Law on Energy Efficiency introduces measures designed to encourage reductions in energy consumption and has been largely successful in doing so. This law, and the corresponding Implementing Decree dated 2 September 2004:¹³⁷

- establish an environmental management system to support enterprises in improving their environmental performance,
- provide for mandatory measures for the thermal performance of new buildings;
- promote greater degrees of corporate social responsibility;
- require companies to undertake continual and comprehensive energy audits, responding to their findings by implementing energy savings techniques when such mechanisms are activated.

With regard to the final point on company energy audits, an amending Decree of 31 July 2009 establishes further conditions for compulsory and periodic energy audits for all companies in the industrial sector and the transport, tertiary and residual sectors, whose total energy consumption is equal to or greater than eight hundred tons of oil equivalent. The energy audit must occur every 5 years. In between

¹³⁵ République Tunisienne Ministère de l'Industrie, de l'Énergie et des Mines (2014) *Stratégie Nationale de Maîtrise de l'Énergie (National Strategy for Energy Management)*
http://maghrenov.eu/file/download/2878/Strategie+Nationale+de+Maitrise+de+l%27Energie_web.pdf.

¹³⁶ <http://www.al-monitor.com/pulse/business/2014/04/tunisia-ranks-first-arab-energy-efficiency.html>

¹³⁷ Joint Ministerial Orders are promulgated by the ministry in charge of energy and the ministry in charge of housing, which set out practical measures for the implementation of these laws.

audit dates, companies are obliged to provide the ANME with annual data on their energy consumption. The energy audit is carried out by an auditor (although the company may also conclude a contract with an energy service establishment) who proposes an energy saving plan. The energy audit report and energy saving plan are used as the basis for a contract for the realization of energy saving measures between the ANME and the audited firm.

Law on Energy Management

This Law formally prioritises energy management as a core component of sustainable development at Article 1 and defines energy management as all actions to ensure rational (efficient) energy use and the promotion of renewable energy.¹³⁸ The Law on Energy Management includes requirements such as labelling of materials, household appliances and equipment to indicate their energy consumption,¹³⁹ and use of renewable energy in public lighting. The labelling of refrigerators is said to have significantly improved their efficiency, with the least efficient models no longer able to be sold. Regulations on air conditioners are following suit.¹⁴⁰ The Law also regulates the thermal performance of buildings, with mandatory thermal insulation for new buildings and extensions to existing buildings in place since 2005. A mandatory energy performance certificate was introduced for important types of buildings in 2010.¹⁴¹

¹³⁸ Loi n° 2004-72 relative à la maîtrise de l'énergie, adapted by Law No. 2009-7.

¹³⁹ Article 8 of Loi n° 2004-72 relative à la maîtrise de l'énergie.

¹⁴⁰ Provision of Technical Support/Services for an Economical, Technological and Environmental Impact Assessment of National Regulations and Incentives for Renewable Energy and Energy Efficiency. Country Report Tunisia (2010)

Law on Air Quality

The Law of 4 July 2007 on Air Quality formally “aims at preventing, limiting and reducing air pollution and its negative effects on human health and on the environment, and at defining the necessary procedures for air quality surveillance; thus preserving the citizens’ right to a sound environment and ensuring sustainable development.”¹⁴² The ANPE is the agency responsible for air quality and its impact on the environment, and for establishing a national air quality surveillance network.¹⁴³ These provisions offer opportunities for energy efficiency achievements in Tunisia, in particular through inclusion of efficiency requirements in the mandate and activities of the national air quality surveillance network.

Finance Acts of 1992 and 2013

The Finance Acts of 1992 and 2013 have created two main funds that further the aim of reducing pollution from energy emissions: the FODEP Clean-up Fund and the National Fund for Energy Conservation,¹⁴⁴ both of which have the potential to become important for financing the energy transition in 2016 and beyond.

Decree No. 2009-2617 of 14 September 2009

Construction is a key sector of the economy that has the potential to improve energy efficiency savings, through reducing energy consumption in buildings. The Decree No. 2009-2017 of 14 September 2009 regulates the construction of civil buildings and promotes investment and development

http://www.rcreee.org/sites/default/files/rcreee_rs_country_report_tunisia_en_2010.pdf

¹⁴¹ Article 10 of Loi n° 2004-72 relative à la maîtrise de l'énergie.

¹⁴² Law No. 2007-34 on Air Quality, Article 1.

¹⁴³ Law No. 2007-34 on Air Quality, Article 3.

¹⁴⁴ Finance Law No. 2005-106 of 19 December 2005

of green buildings. Under this decree, an internal commission and a technical commission of civil buildings is established to ensure, among other tasks, that energy and water efficiency are considered in new building projects.¹⁴⁵ Within a year of these regulations coming into effect, more than 2,000 new buildings were constructed in compliance with these regulations.¹⁴⁶

For residential buildings, a joint order of 1st June 2009 provides minimal technical specifications to achieve energy efficiency in the construction of new, and renovation of existing, residential buildings, complementing the Law on Energy Management discussed above.¹⁴⁷

A financial incentive scheme (PROMO-ISOL) offering both grants and soft-loans has been in place to stimulate the thermal insulation of roofs since 2009 and another scheme (PROSOL) has been successful for solar water heating.¹⁴⁸ Various grants are also available for energy audits and demonstration projects for buildings, as well as engine upgrades for cars and boats.¹⁴⁹ These subsidies help energy users comply with efficiency measures.

Finally, Tunisia has undertaken significant practical and operational efforts to improve energy efficiency measures through capacity building initiatives such as training courses in

construction techniques, an “e-learning” programme for architects, the provision of technical guides, a guide to climate zones and temperature simulation tools.¹⁵⁰ However, there remains further potential for improved energy savings and energy efficiency in the industrial sector and the tourism sector.

Legal and institutional barriers:

In order to achieve the energy efficiency NDC priorities of Tunisia, fragmentation of laws must be overcome, and institutional and legal linkages between Tunisia’s efforts to promote sustainable development and those governing sustainable energy efficient investment, collective and sustainable transport, and energy efficient construction strengthened.

The Planning Code of the Territory and Urbanism (CATU) contains rules relating to building permits, but such rules should make a clear reference to sustainable housing and standards of green building. Moreover, urban planning currently fails to consider transport-related objectives, while it is appropriate to create linkages between collective and sustainable transportation systems. Although there may be energy efficiency to be gained, it is unclear whether the CATU has the capacity to effectively integrate energy efficiency components in city policies, improving interactions between social (housing, mobility), economic (growth,

¹⁴⁵ Decree No. 2009-2617 dated 14 September 2009, governing the construction of civil buildings, Article 17.

¹⁴⁶ Ulrike Lehr (GWS) Anke Mönning (GWS) Ra k Missaoui (Alcor) Sami Marrouki (Alcor), “Renewable energy and energy efficiency in Tunisia – employment, qualification and economic effects” (Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Tunis December 2012).

¹⁴⁷ Joint order of the Minister of Equipment, Housing and Territorial Development and the Minister of Energy, Industry and Small and Medium-Sized Enterprises dated 1st June 2009, specifying the minimal technical specifications aiming at economy in the energy consumption of the projects of buildings of residential use construction and extension.

¹⁴⁸ Provision of Technical Support/Services for an Economical, Technological and Environmental Impact Assessment of National Regulations and Incentives for Renewable Energy and Energy Efficiency. Country Report Tunisia (2010)

http://www.rcreee.org/sites/default/files/rcreee_rs_country_report_tunisia_en_2010.pdf

¹⁴⁹ Decree No. 2005-2234 and Decree No. 2009-362.

¹⁵⁰ ‘Introducing Thermal and energy requirements standards in Tunisia’ http://www.ffem.fr/jahia/webdav/site/ffem/shared/ELEMENTS_COMMUNS/U_ADMINISTRATEUR/5-PUBLICATIONS/Changement_climatique/Plaqueette_Tunisie_ReglThermique_GB.pdf.

tourism, transport), environmental (the sustainability of the resource), spatial and institutional considerations.

Tunisia should also consider expanding the mandatory energy performance certificate established by the Law on Energy Management from only “important” types of buildings to all buildings, to provide all building owners and renters with important information on the energy efficiency of their buildings and how to improve it.¹⁵¹ Demand-side measures could also be improved, including the introduction of smart meters and informative billing practices, similar to EU policy on energy efficiency.¹⁵² Bills could be based on actual consumption and comparison of energy use between billing years, providing an incentive to save.

In addition, the state does not yet allocate sufficient funds to support local communities that have demonstrated an effort to implement projects related to energy efficiency, conservation and, more globally, to addressing climate change. Further, the draft Local Communities Code of June 27, 2016 refers specifically to disaster risk reduction, protection of the environment and the green economy. There is space for this new legal project to allocate funds to support local communities that have demonstrated efforts in the implementation of projects related to energy conservation.

To improve the agricultural sector’s contributions to mitigation and adaptation

Adaptation to climate change, and also mitigation of GHG emissions, through AFOLU changes are an important priority in Tunisia’s NDC. This priority reflects the importance of stabilizing agricultural production and achieving food security goals, as well as strengthening the conservation and sustainable development of land and water resources.¹⁵³ Adapting agriculture to climate change impacts is an essential objective of several Tunisian national strategies. For example, Tunisia’s National Plan 2016-2020, at Challenge No. 8, aims to strengthen capacity to adapt to climate change and desertification. To this end, an adaptation strategy for agriculture and ecosystems is to be adopted, alongside a new plan for adapting the coastline to climate change. There are also plans to provide new investment incentives for projects that can deliver a greener economy, cleaner development and improved water resources management.

Legal and institutional enablers:

Opportunities to reduce GHG emissions and develop greater resilience through changes to AFOLU are governed by:

- the Law on Protection of Agricultural Land of 11 November 1983, as amended in

¹⁵¹ See e.g. Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

¹⁵² Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

¹⁵³ Ministère de l’agriculture et des ressources hydrauliques (2007) *Stratégie nationale d’adaptation de l’agriculture tunisienne et des écosystèmes aux changements climatiques* (National Strategy for adaptation

of Tunisia’s agricultural sector and its ecosystems to climate change impacts) See also Radhouane, L. (2013) “Climate change impacts on North African countries and on some Tunisian economic sectors” *Journal of Agriculture and Environment for International Development* Vol 107(1) and GTZ. (2007) *Adaptation to climate change: development of a national strategy for agriculture, ecosystems and water resources in Tunisia 2005 to December 2007.*

1995 and, more recently, in 2016,

- Orientation Law on Agriculture of 27 July 2004
- Draft Code of Incentives to Investors, and
- Agricultural Law of 5 April 1999, which is supported by implementing regulations on Organic Farming and the Plant Protection Act of 3 August 1992

Law on Protection of Agricultural Land

This law seeks to carefully regulate the use of irrigation and forestry activities under a strict regime of integrated land-use planning and monitoring, with controls and even moratoria on changes in use. The Law is founded on, and reflects, Tunisia's Law on Agrarian Reform in Public Irrigated Areas and the Forest Code of 14 April 1988 which both provide for measures related to mitigation and adaptation to climate change. For instance, through the establishment of forest management plans that enable the renewal and reconstruction of forest resources through afforestation, and activities to prevent illegal clearing of forested areas, desertification and silting, Tunisia can advance its NDC priority for climate-smart agriculture and also access possible opportunities for reduction of emissions from REDD+ investments.

Orientation Law on Agriculture

Article 1 of the Orientation Law on Agriculture of 27 July 2004 recognizes the importance of responding to climate change for Tunisia. This regulatory regime provides for national maps, based on the natural characteristics, climatic conditions and productive specifications of different regions,

essentially offering a land use planning framework which integrates the country's efforts to combat climate change.¹⁵⁴ The Law is supported by ten Decrees, promulgated in 2006, which include rules on agricultural and land-use planning maps, which also provide opportunities for both climate adaptation and mitigation planning. Unfortunately, enforcement of these laws is presently falling short of initial hopes. Article 4 of the Orientation Law adds that "incentives and benefits will be granted to those who comply with the objectives of this law".

Draft Code of Incentives to Investors

According to the draft Code of Incentives to Investors, subsidies are available for plantations of forest and pastoral tree species on privately owned lands. "Premiums vary between 50% of the total cost (for a project with an amount of less than USD150,000) and 30% (if the amount of the investment is more than USD150,000)."¹⁵⁵ Nevertheless, these incentives have not been acted upon by private land owners, and no pastoral or forestry development projects have yet been implemented.

Furthermore, significant effort has been made to strengthen premiums and provide incentives for improved production equipment and energy management systems in the agricultural sector to ensure the industry is more resilient to climate change.

Agricultural Law and its implementing regulations

Further measures have also been enacted to improve adaptation measures, such as the Agricultural Law

¹⁵⁴ Article 2 of the "orientation law on agricultural production activities" states : "Agricultural land as defined in Article 1 of Law No. 83-87 of 11 November 1983 on the protection of agricultural land are classified according to the production of maps established in function of the

productive specificities , natural and climatic given and factors of economic efficiency and competitiveness of agricultural products in the affected region"

¹⁵⁵ FAO. Country Report: Tunisia. In State of the Forest Report.(2016) <http://www.fao.org/3/a-c0185e.pdf>

of 5 April 1999, which is supported by implementing regulations on Organic Farming and the Plant Protection Act of 3 August 1992, which, in turn, are supported by a framework of standards and limit maximum pesticide residue.

The creation of a "Mutual Fund for Compensation for Agricultural Damage due to Natural Disasters" by Article 52 of Law No 86-106 of 31 December 1986 comprising the Finance Act for 1987 may also be highlighted as part of the national response to climate change, in terms of mechanisms to address potential loss and damage due to the adverse effects of climate change.

Legal and institutional barriers:

The abovementioned laws, as well as Tunisia's Forest Code only partially address the comprehensive objectives of the country in relation to adaptation and mitigation of climate change of the agricultural section, as represented in the NDC.

Agricultural land use is governed by the Agricultural Land Act 1983, amended in 1996, which subjects land to different regimes (of prohibition or protection). The implementation of this law, including a ban on unregulated changes of land use to protect agricultural lands, has been challenging, affecting its credibility. More generally, land use planning in Tunisia is governed by the Land Use Planning and Urban Planning Code of 24 November 1994. It uses spatial planning documents (Master Plans for Development, prepared at a central level) and urban planning documents (Urban Development Plans and Detailed Planning Plans, prepared at a decentralized level). This Code is currently being revised, to ensure its conformity with the 2014 Constitution.

Similarly, there is an opportunity to give more emphasis to the potential role of forests in Tunisia's climate change mitigation and adaptation strategy. Currently, substantial amendments to the Forest Code are being debated in Tunisia, and these discussions should include strategies and proposals for measures to achieve significant GHG emission mitigation targets. Now, they are simply addressing the challenges of advancing desertification in an isolated manner. In addition, the application of the Forest Code, rather than being limited to arid areas of the country, might be carefully considered for Tunisia's wetlands areas.

Forests can play an essential role in addressing climate change through the "capture and storage" of CO₂ and there are opportunities to attract investments in the forestry sector, through adoption of appropriate incentives and regulatory reforms. To this end, it may, for instance, be appropriate to amend Article 1 of the Code referring to the forest heritage to link its protection and development provisions more directly to actions that seek to address deforestation and climate change.

There is an opportunity to overcome inter-sectoral fragmentation, and to promote more integrated landscape level management plans for sustainable development, if adequate procedures monitoring, transparency, for stakeholder engagement, and public participation can be set, opening new opportunities for green investors. This includes the integration of the Local Communities Code and Renewable Energy Law.



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Implement water resources adaptation projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres

Water resources are central to concerns about climate change in Tunisia, a country that exists in conditions of severe water stress, frequent shortages, and encroaching desertification. In the new Constitution of Tunisia, the right to water for all citizens is guaranteed at Article 44, leaving all levels of government facing difficult choices for water governance. Yet, on the whole, Tunisia is an example of good water planning and management.

The adaptation strategy selected for Tunisia's NDC seeks to consolidate and complement relevant policies, regulations and actions by addressing related challenges with regards to water resources, coastal planning and development, agricultural ecosystems, tourism and health. Tunisia's NDC

¹⁵⁶ For more information on Tunisia's Adaptation Strategies, and the Climate Change Adaptation Strategy in particular see UNDP Africa Adaptation Programme 'Tunisia' <https://www.undp-aap.org/countries/tunisia> and N Omrani and M Ouessar (2012) "Integrated Water Management in Tunisia: Meeting the Climate Change Challenges" in *Integrated Water Resources Management in the Mediterranean Region*. (Redouane Choukr-Allah and others (eds) (Springer)

seeks specially to support water management projects for urban centres such as Greater Tunis, Cap-bon, Sahel and Sfax, among others. The NDC further prioritizes the optimization of water resources management in the tourism sector, and the installation of mini seawater desalination plants using renewable energies. Water adaptation priorities in the NDC of Tunisia are also supported and assisted by the country's National Climate Change Adaptation Strategy.¹⁵⁶

Legal and institutional enablers:

Over several decades, Tunisia has sought to rationalize the use of water and modernize Tunisia's distribution network.¹⁵⁷ The legislative and other measures introduced and the institutions established demonstrate that existing concerns in these sectors are recognised and continue to be prioritised by the Tunisian government and citizens, though implementation, including monitoring and enforcement, are often challenging. The most important laws for water resource management are:

- the Water Code of 1975, and
- the Coastal Law of 24 July 1995

The Water Code

The Water Code of 1975 designates key institutions to achieve the objectives of the Code, including for example, differentiated pricing of water according to its end-use (i.e. drinking, agricultural, tourism and other uses). The Water Code also governs adaptation activities.¹⁵⁸ It provides for

¹⁵⁷ World Bank (2014) *Water: Tunisia's Other Development Challenge* <http://www.worldbank.org/en/news/feature/2014/09/04/water-tunisia-s-other-development-challenge>; This article notes that "Over the last decade, Tunisia has achieved considerable success in expanding access to both water and sanitation services, but challenges remain"

¹⁵⁸ As noted: Act No. 99-43 of 10 May 1999 on development groupings in the agriculture and fisheries

measures to govern water conservation and the use of unconventional water, including water use fees that increase once a set limit is passed and strict penalties for interrupting a water course.¹⁵⁹ The government subsidizes the private sector to invest in desalination and considers this technology a key part of the long-term water management strategy for the country. In 2001, an amendment to the law incorporated direct recognition of the importance of sustainable and protected use of water, for all citizens and sectors of the economy. Water management is recognised as one of the most important elements of sustainable development for the country.¹⁶⁰ A National Programme of Irrigation Water Conservation was established to rationalize the use of water and to ensure that the maximum economic value is derived from irrigation, while keeping water demand at a sustainable level. Policies, standards and other measures that can improve the implementation of water resources management are only able to be amended pursuant to the overarching Water Code.

Two ten-year strategies for the mobilization of water resources have been elaborated and implemented to date under the Water Code. These strategies have sought to guarantee drinking water supplies, to provide adequate water resources for irrigation, and to secure the water management necessary for the development of different regions of the country.

sector, together with the texts which amended or supplemented it, and in particular Law No. 2004-24 of 15 March 2004 has set up a network of user groups throughout the Republic, particularly in rural areas, with a view to jointly managing and distributing water points.

¹⁵⁹ Water Code, Chapter 2.

¹⁶⁰ Loi no. 2001-116 of 26 November 2011, amending the Water Code, article 86.

¹⁶¹ Loi n° 95-72 du 24 juillet 1995, portant création d'une agence de protection et d'aménagement du littoral, Article 3.

Coastal Law

The Coastal Law of 24 July 1995 defines the coastline, the reorganization of its occupation and its contributions to the integrated sustainable development of Tunisia. An Agency for Coastal Protection and Management (*Agence de protection et d'aménagement du Littoral – APAL*) was also established for this purpose, and plays an important role in achieving the adaptation aspects of Tunisia's NDC, through its mandate for coastal area management. In particular, APAL ensures compliance with rules and standards on coastal management; regulation and control of land-use; research on coastal protection and analysis of the evolution of coastal ecosystems.¹⁶¹

A further Tunisian initiative of relevance is related to the introduction of coherence in the strategy for climate change, which attempts to address existing gaps in sectorial coordination. This work seeks to strengthen the integration of climate change impacts in Tunisia's water governance strategy, for instance addressing challenging issues of management of transboundary waters.

Example of Sectoral Coordination for Climate and Transboundary Water Management Institutions

Tunisia shares a major aquifer with Algeria and Libya and a major river with Algeria.¹⁶² Climate change considerations have been added to conventional governance dimensions of these transboundary water

¹⁶² The Medjerda River is the most important transboundary river between Tunisia and Algeria. It originates in Algeria, an upstream country, and then flows eastwards into Tunisia, a downstream country, before flowing into the Mediterranean Sea (Gulf of Tunis). Running over 460 kilometers, including 350 in Tunisia, it is the only and longest permanent watercourse in Tunisia.

systems, according to studies undertaken on the adaptability of public policies connected to the objectives of the NDC. After conducting a socio-economic study on the value of water for sustainable agriculture and the better preservation of aquifer resources in the region, the Observatory of the Sahara and Sahel,¹⁶³ in partnership with the three countries, undertook another study to identify the impacts of climate change, to assist in adaptation planning. These investigations have established that climate change has led to the degradation of water quality and the increased frequency of wind and sandstorms with a resulting impact on water resources. They also identified options for the adaptation of agriculture to climate change, including by the introduction of livestock, the reconsideration of crops with high water requirements and the introduction of more efficient irrigation techniques. The key lesson that has been learned is that farmers have a significant ability to adapt to climate change, which should be strengthened. The need to strengthen the regional and international momentum, as well as that of the basin countries. It is in this context that Tunisia, after ratifying the 1997 Convention on the Law of International Watercourses

used for purposes other than navigation, is studying its adherence to the "Water Convention" of 1992, which entered into force in 2016.¹⁶⁴ That Convention is closely related to the UN Framework Convention on Climate Change, which that Tunisia ratified in 1993. The General Directorate on Water Resources of the Ministry of Agriculture is engaged in the work of the International Task Force to identify projects and related financing. The General Directorate has also organized a national workshop on the water-climate change nexus and the potential benefits of this linkage.¹⁶⁵

Legal and institutional barriers and opportunities:

The 1975 Water Code is outdated for its purposes, despite key amendments that have been made over the years. The amendment of 2001 incorporated options for increasing the quantity of water available in Tunisia, through methods such as reusing treated water, desalination plants, and for the introduction of a rationing system, that would limit the use of water for certain end uses.¹⁶⁶ Nonetheless, the Code is not tailored to adequately address new challenges occurring due to global climate change. An overhaul of the Water Code may be both necessary and urgent to ensure the protection not

¹⁶³ Observatoire du Sahara et du Sahel : <http://www.oss-online.org/>

¹⁶⁴ United Nations Economic Commission for Europe (UNECE) 'The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention)'

<http://www.unece.org/env/water/pdf/waterconf.pdf>

¹⁶⁵ « Benefits of cooperation and the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes" 21-22 September 2016 Hôtel-Belvédère, Tunis : https://www.unece.org/fileadmin/DAM/env/water/meetings/Water_Convention/2016/Benefits_of_Coop_21-22.09_Tunisia_and_the_UNECE_Water_Convention/Programme-Final_EN.pdf. The argument states: " Recognizing the significance of future water challenges and issues, Tunisia is determined to promote transboundary water management based on effective cooperation. In this

perspective, Tunisia continues reviewing and evaluating the opportunity to access new international legal instruments. Thus, in 2009, Tunisia began ratifying the 1997 United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (entered into force in 2014). In addition, after deciding a strategy against climate change wherein water is a major challenge, Tunisia signed the Paris Agreement of December 2015 (CoP 21). These two conventions are closely linked and complementary. UNECE and GWP-Mediterranean have supported the organization of the Workshop on clarifying provisions, benefits and obligations deriving from the Water Convention for Tunisia, as well as the procedures of the accession process."

¹⁶⁶ Loi n°. 2001-116 of 26 November 2011, amending the Water Code, article 87 and 90.

only of the quantity of water available, but also of its quality. Moreover, water governance could be improved by introducing the concept of integrated water management and participation in water management by user associations. Water information systems could also be improved, including a tightening of the control and monitoring regime. Any new Water Code should also include measures for unconventional waters (salt water, treated wastewater, water obtained from desalination of seawater).

The new Water Code project provides for privatisation as a possible means of improving water management. The draft Code encourages PPPs for the management of water resources and installations within the framework of concessions. The draft Code also includes partnership incentives for the development of water-saving technologies and desalination.

Nonetheless, the simple privatization of the sector, even via PPPs, may not provide the most efficient and effective solution for the challenges faced, and the policy choices in this area are intensely political in nature.

As the brief summary above demonstrates, while opportunities and legal innovations exist, the current sector-based laws, standards and regulatory frameworks of Tunisia do not yet sufficiently prioritise the country's response to the threats and opportunities of climate change. In addition, the mandates, powers, compositions and human resources capacities or specializations of the implementing institutions are not yet adequate. Indeed, many of the key institutions operate mainly due to sporadic foreign assistance, with specific projects funded by international organizations. The following sections

provide an analysis of cross-cutting legal instruments, and some overarching recommendations for change, beyond sectoral boundaries.

Further challenges affecting the implementation of Tunisia's NDC priorities and initial recommendations

Better environmental governance on climate change is needed in Tunisia. This includes both institutional improvements and legal reforms, which will be analysed in turn in this section.

There are already many structures and institutions dedicated to climate change and sustainable development in Tunisia. It is important that the focus areas of each institution should be better clarified to avoid overlap. The Government should harmonize interventions of the Ministry for Environment and Sustainable Development, the Ministry of Agriculture, Water Resources and Fisheries and the Ministry of Industry and Energy with all other stakeholders in the sectors in relation to actions on climate change. While it is important to keep clear the distinctions between those representing public institutions, such as government agencies, those representing private parties, such as business associations or investors, and civil society bodies, there is a great deal to be gained by engaging all in constructive efforts to respond to climate change.

Important institutional restructuring carried out on August 20, 2016 may present new opportunities and recourse for sustainable investment and investors in Tunisia. The restructuring included the merger of Ministries and institutions charged with the promotion of local interactions with those

responsible for environmental protection and sustainable development, with important effects for investments across the entire territory of Tunisia. These changes will require careful engagement with local and regional actors to improve their capacity to overcome existing difficulties in compliance and enforcement of laws and regulations related to climate change. However, if implemented well, the merger between local governance and environmental protection has the potential to provide the basis for important new initiatives, and greater cooperation.

It may also be appropriate to revise institutional charters more broadly, providing a legal basis and revised mandates for the specialized bodies and services upon whose efforts Tunisia's adequate implementation of the NDC priorities depends, such as the National Commission for Sustainable Development (*Commission Nationale pour le développement durable*) and Tunisian Observer of the Environment and Sustainable Development (*Observatoire tunisien de l'environnement et du développement durable*). By reforming, strengthening and consolidating their missions and mandates, providing them with the required competencies, jurisdictions, powers and resources based on clear objectives in relation to climate change, reform could grant increased stability and effectiveness to attract and encourage higher levels of investment in low-carbon sustainable development.

Finally, the Forum for Sustainable Development and the Rights of Future Generations (*le projet de loi de l'instance du développement durable et le droit des générations futures*)

provides further important opportunities for more coherent institutional governance in relation to climate change. A draft organic law is being developed by civil society. It was picked up by the Ministry in charge of Constitutional issues and has undergone modifications following national consultation. It stems from article 129 of the Constitution, which establishes the Forum for Sustainable Development and the Rights of Future Generations, which must be consulted on all new legislative projects touching on issues of the economy, society and environment, as well as development planning. The draft organic law aims to establish the modalities for this Forum. The law seeks to establish an independent¹⁶⁷ constitutional body, which is primarily consultative, but can also impact public policy. This body can take initiatives, make proposals, give advice and ensure that future bills align with its object. Key considerations for the shaping of the Forum is whether it will become a government institution, or remain led by civil society, and how it will be funded.

Under this new law, it may be possible to give the institution established by the sustainable development and future generations regime the mandate to, on its own initiative, highlight climate law and governance reforms that are deemed necessary to the Government and the Parliament. This may provide a mechanism to secure greater coherence across the diverse sectors affected by the NDC and the investment that is sought to achieve its ambitious targets.

Regarding legal reform, environmental and investment legislation could both be strengthened. This section will specifically look at:

¹⁶⁷ Article 9: The Forum is composed of 15 members who are qualified in their field of competence, including at least

7 women. ARTICLE 10: The members of the Forum shall hold office for a single six-year term.

- Environmental Code (still in draft form)
- Decree on the Environmental Impact Assessment (EIA) Law, 11 July 2005
- Law on Public Private Partnerships of 2015
- Investment Law of 30 September 2016

Environmental Code

The new Environmental Code (currently still in draft form) can offer important contributions to climate change action, including through the integration of environmental governance in a single, specific piece of legislation. By bringing together diverse areas of policy and law, diverse groups of stakeholders interested in the protection of the environment and investors interested in sustainable and low-carbon development, the Environment Code may unite efforts towards a greener economy in Tunisia.

The draft Environment Code is an "umbrella" code containing 168 items. It codifies the rules relating to the fight against climate change including those relating to energy, agriculture, forests, coastlines, water resources and waste. Its purpose is as follows: "the basic objective of the proposed Code is to reinforce the right to the protection of the environment without rupturing the legislative fabric in force, by supplementing it, harmonizing it and making it more accessible and more accepted and in compliance with international commitments on the matter." Article 10 includes a major principle: "The adoption of rules protecting the environment cannot be a regression, except for the adoption of more stringent rules". The principle of non-regression is enshrined in Article 49 of the Tunisian Constitution of 2014.

It should be noted that the draft Code has express provision for "incentives and financing of environmental protection activities," and has opened the way to new opportunities in priority sectors such as renewable energy and waste. However, it is imperative to harmonize the project with the new investment Law incentives and the Law on PPPs, which also offer opportunities to investors. Both of these laws are explained in more detail in the following paragraphs.

Environmental Impact Assessment Law

The 11 July 2005 Decree on the Environmental Impact Assessment (EIA) Law¹⁶⁸ provides an opportunity for the ANPE to assess, evaluate and measure the environmental impacts of a project over the short, medium and long term.¹⁶⁹ While this Decree could provide an opportunity to consider climate change, there are presently very few specific references to climate change impacts and risks. Updating and streamlining of existing EIA regulations may help to ensure that the legal and institutional framework is easier to use and more efficient, particularly in terms of securing necessary support and incentives for the greater adoption of renewable energy technologies.

Monitoring, reporting and verification

NDC implementation in Tunisia would benefit from the establishment of more frequent and robust monitoring, reporting and verification systems, based on agreed assessment frameworks, in order to track progress of NDC implementation.

Tunisia does not currently have a single legal framework specific to MRV. However, a few scattered texts do

¹⁶⁸ Law No. 88, 1991 and Decree No. 362, 1991.

¹⁶⁹ Article 1. See also Articles 5 and 6.

touch on this subject and establish monitoring and reporting regimes for environmental impacts. All are sector specific. For example, the ANPE is responsible for monitoring polluting discharges, including periodic inspections of all operations required to receive permits to discharge waste or pollution into the environment, or discharge waste water into the sewerage networks.

The Law on Air Quality establishes a system of control and monitoring of air pollutants at the source and connection of all facilities to the national air quality monitoring network. Energy intensive establishments are also subject to compulsory and periodic energy audits. Inspection experts are invested with judicial police powers; they collect data on polluting activities (quantities of waste, sources of pollution, as well as pollution control projects and offenses). The APNE has also established Air Quality Conservation Plans for urban areas with populations exceeding a pre-determined number and for areas that exceed threshold values for air quality alerts. The Law on Air Quality provides for the establishment of a National Air Quality Monitoring Network (Réseau national de surveillance de la qualité de l'air 'RNSQA'), to monitor and inform on air quality, in order to prevent critical deteriorations. It also includes the publication of monthly air quality information bulletins in Tunisia, distributed to members involved in the environmental field, and an annual report on air quality.

Finally, Tunisia has designed different environment and sustainable development indicators, covering the themes of air, waste water and waste among others. Among the different agencies that collect data for these indicators, however, the sources of the data are different and use different

methodologies. In addition, environmental information is produced only in the context of project management and rarely for statistical purposes. Statistical information is therefore fragmented, dispersed and heterogeneous.

There is, therefore, a clear need for legal reform in Tunisia to adopt to a holistic MRV system for climate change that adheres to international standards, including those being discussed in the elaboration of the Paris Rulebook. A National Action Plan may be required to achieve this, supported by transparent public engagement, and identifying concrete actions. For example, the MRV system should include GHG monitoring mechanisms, information requirements and a GHG inventory system. The inventory of greenhouse gases should be prepared by the ANME in close collaboration with other relevant stakeholders such as ANPE, OTED, ANGED and local authorities. The period covered by the inventory should begin from the base year. The inventory should cover emissions from all sectors: energy, industrial processes, land use, land-use change and forestry, waste, agriculture, etc., with regard to their impact on the NDCs. It would also be useful to include an indicator on the cost of environmental degradation that takes into account the carbon footprint.

A single statistical unit should be established, to avoid each institution developing its own data and statistics according to its own objective and to avoid a divergence of terminologies and methodologies. To overcome the challenges of different information coming from one-off studies, there is a need to develop a single agreed-upon method of data computation.

In terms of water, it would be useful to set up a soil information system, grouping together the different monitoring networks managed by the Directorate-General for Water Resources, to ensure that these are oriented towards the NDC issue. Finally, the Paris Agreement requires Tunisian public authorities to communicate an NDC every five years and to report regularly on the progress made in the implementation thereof.

Law on PPPs

The Law on PPPs 2015 makes little reference to climate change and does not contain express objectives regarding Tunisia's response to climate change. A reference to climate change could ensure that the procedures and criteria for evaluating the costs and benefits of a PPP consider the economic, social *and ecological* aspects, specifically the potential for high levels of environmental compliance. The Law on PPPs, as well as the new Investment Law (discussed in the next section), are both drafted in the spirit of: "fewer rules and more deals". In the Law on PPPs, this spirit is reflected by the law establishing only the framework for PPP contracts, allowing private investors and public bodies to negotiate the details of the contract with greater flexibility.

Investment Law

The Investment Law of 30 September 2016 is also worthy of analysis in this regard. It promotes investments aimed at achieving sustainable development in light of national priorities,¹⁷⁰ providing substantial guarantees to investors.¹⁷¹ Among incentives for other priority

investments, the Law establishes a "sustainability premium for investments contributing to the fight against pollution and for environmental protection".¹⁷² Sustainable investments are also eligible for tax benefits, investment premiums and state support for investment costs.¹⁷³ The Investment Law also simplifies procedures and institutional arrangements for investments, including the establishment of a High Council, a forum and an investment fund which should prove a reassuring and encouraging governance structure for investors.¹⁷⁴ The Investment Law also represents the implementation of an existing constitutional obligation, through the inclusion of investor obligations to ensure environmental security and climate protection,¹⁷⁵ assisting 'green investors' to compete on a more level playing field. By internalizing the previously-externalized costs of environmental protection, an opportunity has emerged to build awareness of the scale and importance of these concerns for investors and all others in Tunisia.

Still, there are weaknesses in the Investment Law. In the definitions section, for instance, no reference is made to the sustainability of the investment.¹⁷⁶ The Investment Law also contains insufficient reference to the importance of climate change in investment-related decision-making, investor compliance with rules relating to environmental protection, and the development of innovations in key sectors such as energy efficiency improvements, renewable energy or energy-saving green buildings.

¹⁷⁰ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 1.

¹⁷¹ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Articles 7 to 10.

¹⁷² Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Articles 4 and 19.

¹⁷³ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 20.

¹⁷⁴ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Title IV.

¹⁷⁵ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 4.

¹⁷⁶ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 3

Strengthening these investor requirements may increase the likelihood of grants to projects that contribute to the fight against climate change. These projects could be listed in an Annex to the Law and could include renewable energy, organic farming, urban parks, and other priorities of Tunisia's NDC.

Nevertheless, the Investment Law can also contribute towards improved government coordination. Article I sets the objective of promoting investment and achieving sustainable development alongside other priorities for the national economy.¹⁷⁷ There are opportunities, within the existing investment structures, to make explicit reference to climate security challenges as prioritized in the Constitution, rather than reference to sustainable development only. The Law refers to 'Investment Governance' and seeks to attract investment in key sectors of the Tunisian economy, incentivizing sustainable development. However, it is unclear whether sufficient capacity, or even knowledge exists among the investment promotion authorities (Foreign Investment Promotion Agency (FIPA-Tunisia), the Industrial Promotion and Innovation Agency (APII) and the Agriculture Investment Promotion Agency (APIA)) with regards to the types of investments required for a robust response to climate change in Tunisia. There may be opportunities to establish or strengthen links between the new structures created by the Investment Law, such as the Supreme Council for Investment,¹⁷⁸ and the recent legal and policy reforms in relation to sustainable development and climate change. This could include

the Forum for Sustainable Development and the Rights of Future Generations.

Other tax policies and funding mechanisms

Further, tax policies have not yet been carefully adjusted to support the Sustainable Development Goals and the commitments in Tunisia's NDC. While there are specific incentives that relate to investments for environmental protection and waste processing ("50% tax reduction on reinvested income or profits, taxation of income and profits at a reduced 10%, 20 % premium on the value of investments, and VAT suspension on specific capital goods"¹⁷⁹), the current scheme for environmental taxation presents obstacles for sustainable investment in Tunisia. Current rules tax the raw material, and the existing environmental taxation fee for the protection of the environment does not yet encourage companies to integrate environmental concerns into their business through measures approaching full-cost accounting (i.e. including negative environmental externalities).¹⁸⁰ An input tax does not encourage those who pay it to limit pollution or consumption, as it does not consider the full environmental cost. In other words, the cost of a finished product remains the same, whether or not it is made with inputs that have contributed to the protection of the environment. Overall, there is space to introduce new taxes or charges for products that contribute to GHG emissions, similar to a carbon tax. There is also space for the law to explicitly promote green investment with special incentives, such as tax

¹⁷⁷ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 1.

¹⁷⁸ Law No. 71 of 2016 of 30 September 2016 relative to the law on investments, Article 11.

¹⁷⁹ Alm, J. (2015) 'Analyzing and reforming Tunisia's tax system' CEQ Working Paper No. 34:

http://www.commitmentoequity.org/publications_files/Tunisia/CEQ%20WP34%20Analyzing%20and%20Reforming%20Tunisia%20Tax%20System%20May%202015.pdf.

¹⁸⁰ Ibid.

benefits for attaining specified environmental standards, for example. Moreover, the finance laws have further potential, for instance, to provide a fund for the fight against climate change, financed by taxation on polluting products, including a significant portion of the car tax.

The unification of the various special Funds of the Treasury, which already contribute in part to action on climate change, would also be an effective means of improving the investment climate. Streamlined administration of funds related to climate change and sustainable development could reverse fragmentation and duplication by providing a flexible and efficient system of financing the country's responses to climate change. A fund to support implementation of Tunisia's NDC may be considered, supporting innovative approaches to existing programs, and strengthening the process of identifying and supporting more feasible and effective new projects in the country. Finally, several conversion agreements have been agreed with international donors, whereby the Tunisian debt is exchanged for investments in clean development projects.

Illustrative Examples of Legal and Institutional Framework for Morocco's NDC

Morocco's NDC: legal status and priority sectors

The Kingdom of Morocco submitted its NDC to the UNFCCC Secretariat on 5 June 2015. On 26 July 2016, the first Chamber of Parliament of the Kingdom of Morocco adopted Bill 42-16, approving the Paris Agreement.

Morocco confirmed its commitment to the Paris Agreement and formally deposited the instruments of ratification on 21 September 2016 in New York during the 71st Session of the UN General Assembly.

Morocco's NDC includes strong mitigation actions, prioritizing the transformation of the energy sector and setting a multi-sectoral GHG emission reduction target, with plans for thorough reform of legal and institutional frameworks, to implement 55 climate actions covering a range of key economic sectors. Concerning adaptation, Morocco has established several quantified sectorial goals for 2020 and 2030, though it is unclear if the country will be able to reach these targets without the support of the international community, despite plans to increase domestic investments and expenditures from 9% to 15%.¹⁸¹ The total cost to reach these goals is USD 50 billion, of which USD 24 billion would be conditional on international support. Morocco forecasts that, between 2020 and 2030, the implementation of adaptation programs will cost at a minimum USD 35 billion for the most vulnerable sectors: water, forestry and agriculture.

Morocco served as host country for the UNFCCC 22nd Conference of the Parties, as the Paris Agreement entered into force, and has been working to set policies to reach its climate change response goals. The highest possible authorities are leading the process, with varying degrees of consultation with civil society stakeholders. The Moroccan Competence Centre for Climate Change (4C) has been established as a centre of excellence meant to build

¹⁸¹ The Green Economy in Morocco, a strategic goal involving partnership dynamics and intensified coordination of policies and initiatives, see United Nations Economic Commission for Africa Office for North Africa, <http://www.uneca.org/sites/default/files/uploaded->

[documents/SROs/NA/AHEGM-ISDGE/egm_ge-_morocco.pdf](#)

capacity, awareness and engagement across Morocco and regionally on questions of climate change.¹⁸² The 4C Maroc Project, supported by the German Federal Ministry of Environment, is being implemented with support from GIZ professionals, and aims to decentralise the decision-making process on climate change.¹⁸³

In Morocco, government authorities have progressively developed a series of national strategies and action plans to address the effects of climate change in accordance with relevant international obligations. Morocco has committed to reduce its GHG emissions by 42% below 'business-as-usual' levels by 2030, contingent upon access to new and enhanced finance and support. Morocco is focusing its efforts in the energy sector, which will account for 50% of the mitigation effort, followed by agriculture at 9.7% and waste at 13%. GHG emission reduction targets also cover sectors such as water, forests, industry and housing. Morocco translates its target into a cumulative reduction of 527 million tonnes of CO₂e over 2020-2030. Morocco allocated 64% of climate-related spending to adaptation, and expects at least 15% of its overall investment budget to be directed to adaptation measures in the

future, including in key sectors such as agriculture, water and forests.

Introduction to Morocco's economic development context

The Kingdom of Morocco is a country in the Maghreb region of North Africa, with both Atlantic and Mediterranean coastlines, and an area of 710,850km² characterized by a rugged mountainous interior and large portions of desert. The political capital city is Rabat, with Casablanca as the largest city and financial centre. Morocco has a population of 33 million with about 43% of its population under the age of 24.¹⁸⁴ With the sixth largest economy in Africa, the country is ranked as 'middle income' at 126 out of 188 countries.¹⁸⁵ Morocco's real GDP grew by 3.8% between 2013-2015, but is expected to fall to 2% in 2016 because of drought, which has been linked to climate change.¹⁸⁶

Although Morocco did not experience significant political disturbances, the country undertook wide ranging reforms and the adoption of a new Constitution in 2011.¹⁸⁷ Economically, Morocco is attempting to move away from a high dependence on its agricultural sector, which has recently experienced

¹⁸² 10 June 2015 'Morocco's INDC - A strong signal coming from the first Arab country' <http://www.climatenetwork.org/node/5211>.

¹⁸³ GIZ 'Establishment of a National Competence Centre for Climate Change Mitigation and Adaptation in Morocco (4C Marco)' http://www2.giz.de/wbf/4tDx9kw63gma/F5_Establishment_of_a_National_Competence_Centre.pdf.

¹⁸⁴ CIA (2015) 'The World Factbook' <https://www.cia.gov/library/publications/the-world-factbook/geos/mo.html>

¹⁸⁵ UNDP (2015) ' Briefing note for countries on the 2015 Human Development Report – Morocco' <http://hdr.undp.org/en/countries/profiles/MAR>

¹⁸⁶ World Bank (2016) ' The World Bank Overview – Morocco' <http://www.worldbank.org/en/country/morocco/overview>

¹⁸⁷ Butera, N. and Pillay, K. (2013) ' UPDATE: Introduction to the Moroccan Legal System' <http://www.nyulawglobal.org/globalex/Morocco1.html>; Ottaway, M. (2011) The New Moroccan Constitution: Real

Change or More <http://carnegieendowment.org/2011/06/20/new-moroccan-constitution-real-change-or-more-of-same-pub-44731>; Justin Frosini, Francesco Biagi (eds) *Political and Constitutional Transitions in North Africa: Actors and Factors* (Routledge 2015) and "The 2011 Moroccan Constitution: A Critical Analysis" (International Institute for Democracy and Electoral Assistance 2012); -Omar bendourou/ Rkia Elmassadek/ Mohammed Madani, (eds), *La nouvelle Constitution marocaine à l'épreuve de la pratique*, (Casablanca 2014) ; Younes Zakkari, *Les mutations dans les pays de l'Afrique du Nord: Espoirs et faux Espoirs*, in :Ali Sedjari (ed), *Pouvoir et contre-pouvoir à l'heure de la Démocratie et des droits de l'Homme*, L'Harmattan, (Rabat 2014) ,pp.287-301; Abdeljabbar Arrach, *Printemps Arabe et Mouvements sociaux au Maroc*, in Hasni Abidi, *Ou va le Monde Arabe ? Les enjeux de sa Transition*, Edition Erik Bonnier, (Paris 2012), pp. 64-73

fluctuations. The country benefits from foreign direct investment, mainly from Gulf Countries and from France, focused on real-estate and the tourism sector.¹⁸⁸

Illustrative examples of Moroccan NDC priorities

To reach over 52% of installed electricity production capacity from renewable sources by 2030

Morocco is recognised as a regional leader in the development of renewable energy.¹⁸⁹ As the Moroccan Monarch has stated, “Morocco has no choice but to strengthen its local capacity for energy production and to open the way to promising energy supply investments. It must continue its efforts to make alternative and renewable energy a cornerstone of the national energy policy.”¹⁹⁰ Morocco is highly dependent on energy imports, with over 91% of its energy needs imported.¹⁹¹ To counter the energy vulnerability, which is caused by the growth of the population and the very large dependency as far as energy needs are concerned, Morocco has been committed to renewable energy investment.

Morocco has substantial potential for the development of renewable energy resources, including solar energy, with an average radiation 5kWh/m²/12; wind energy, with coastal areas that cover

3,500 kilometres and offer wind energy development potential of over 6,000 MW; hydropower, with the potential for hydropower establishments across over 200 exploitable sites; and biomass energy, with over 9 million hectares of forest.¹⁹²



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The Moroccan energy security plan was launched in 2008 with the aim of reducing dependence on foreign energy sources. Morocco aims to achieve a transition in the power sector towards renewable energy and energy efficiency, with significant commitment to the development of solar, wind and hydroelectric power.¹⁹³

The country has ambitious projects; for example, energy generation from the 150MW Noor concentrated solar power plant has already begun. A new record low for wind energy costs was achieved, just as the Kingdom secured a bid of USD 30/MWh from its tender for 850MW of large-scale wind energy projects.¹⁹⁴ The country is also investing in large-scale solar farms, to diversify its renewable sources, and future projects are likely to be

¹⁸⁸ Santander Trade (2015) ‘Morocco: Foreign Investment’ <https://en.portal.santandertrade.com/establish-overseas/morocco/foreign-investment>

¹⁸⁹ (2014) Morocco: policy & regulatory overview <http://www.reegle.info/policy-and-regulatory-overviews/MA>

¹⁹⁰ King Mohammed VI as quoted in Andriani, B. et al (2013) ‘Lighting up the Kingdom of Morocco Energy strategy and recent developments in power projects’ Linklaters.

¹⁹¹ IEA (2014) Morocco Energy Policy <https://www.iea.org/publications/freepublications/publication/Morocco2014.pdf>

¹⁹² Garcia, I. And Leidreite, A. ‘A Roadmap for 100% renewable energy in Morocco’ World Future Council https://www.worldfuturecouncil.org/file/2016/10/WFC_2016_A-roadmap-for-100RE-in-Morocc_EN.pdf.

¹⁹³ Tayeb Amegroud, Morocco’s Power Sector Transition: Achievements and Potential, Paper produced within the framework of the IAI-OCP Policy Center partnership, Istituto Affari Internazionali, in: www.iai.it

¹⁹⁴ 19 January 2016, ‘Morocco’s wind power price goes as low as USD 30/MWh’ <http://renewables.seenews.com/news/moroccos-wind-power-price-goes-as-low-as-usd-30-mwh-509642>.

encouraged in hydraulic energy, as noted in Morocco's NDC.

Morocco has designed a legislative framework to encourage private investment in renewable energy, and has inaugurated two specialized government agencies to provide institutional support: the Morocco Agency for Sustainable Energy (MASEN), which is responsible for managing renewable energy in Morocco, and the Moroccan Agency for Energy Efficiency (AMEE, or l'Agence Marocaine pour l'Efficacité Energétique), which is responsible for developing and implementing national and sectoral plans to improve energy efficiency. The Law No. 57-09 in 2010 created the MASEN, which was updated in 2016 to expand the ambit to cover all renewable energy and not just solar energy.¹⁹⁵ As a limited company with public funding, the MASEN's capital is held by the Moroccan state, the Hassan II Fund for Economic and Social Development, the *Office National de l'Eau et l'Electricité* (ONEE) and the *Société d'Investissements Energétiques* (SIE).

Morocco's National Energy Strategy, which has been in place since 2009, aims to promote the development of renewable energy. The 2009 Strategy set a specific target that renewables account for 42% of installed capacity by 2020 as well as make a 10-15% contribution to primary energy demand. The National Energy Strategy also sought to reduce Morocco's reliance on oil imports and prioritised improvements in energy efficiency. Significant achievements have been made since the strategy came into

effect, including two ambitious programs.¹⁹⁶ These programs are the Solar Integrated Projects, which aim to reach a total installed capacity of 2000 MW through large scale CSP and PV facilities, and the Wind Energy Programme, which aims at scaling up wind capacity to 2000MW through the construction of major wind farms.

Other legal rules establish a more specific regime, with three particularly worth mentioning due to their importance and impact on the National Energy Strategy when implemented. First, Law No. 58-15 on Renewable Energies was launched in 2016 (*Loi relative aux énergies renouvelables*), modifying and completing the previously enacted Renewable Energies Law No. 13-09. These regulations establish a framework for small-scale renewable energy production. Specific innovations in Law No. 58-15 include an increase in the threshold of hydropower plants within the scope of the legislation from 12 to 30 MW, which should help to boost the development of new and larger hydropower projects; allowing the sale of excess electricity production, to promote new renewable energy production; the opening of a low voltage renewable energy market and a consideration of applications to authorise the regional hydraulic basin.¹⁹⁷ Law No. 13-09 on Renewable Energy was supported by Decree 2-10-578, which previously provided the legal framework for the development of renewable energy. The revisions of December 2015 introduced a metering scheme for both solar and wind plants

¹⁹⁵ Royal Decree No. 6502 of 20 Dou El Hija 1437 (22 September 2016) proclaiming Law No. 37-16, changing and extending Law No. 57-09 pertaining to the creation of the "Moroccan Agency for Solar Energy" company.

¹⁹⁶ World Future Council (2015) *100% renewable energy: Boosting Development in Morocco*, http://africa-renewable-energy-forum.com/webfm_send/1606.

GermanWatch (2016) *Summary: Country Fact Sheet Morocco – Energy and Development at a glance 2016*, <http://germanwatch.org/en/download/15120.pdf>.

¹⁹⁷ www.mem.gov.ma

that are connected to the grid.¹⁹⁸ The regulations also support development of the electricity sector by creating an authorisation or declaration system, which allows for energy developers to invest in renewable energy projects through the supply, sale, and export of electricity produced based on negotiated contracts which further encourages investment in renewable energy.

Morocco's Solar Plan can be commended on the achievements it has made thus far. MASEN utilised international tenders for IPPs to implement projects to reach the Solar Plan goal of a minimum of 2000 MW of solar energy by 2020. The NOOR CSP projects for example achieved internationally accredited competitive tariffs with MASEN playing the role of lender to, and raising the debt financing through, a group of international finance institutions. The role that MASEN played as the sole lender significantly lowered the cost of debt and resulted in a reduction of approximately 30% of the price per kWh.¹⁹⁹ Internationally, Morocco has attracted positive attention, with leading financial institutions such as EBRD providing loans of up to \$4.9 million to Maghreb Industries, of which part will be used to finance the installation of a 1.4MW solar plant on the rooftop of the company's new facility. EBRD is attempting to encourage other Moroccan companies to follow in the use of solar energy in industrial buildings.²⁰⁰ However, challenges also remain. For instance, there is no remuneration policy framework for solar energy use. Investors will seek financial

guarantees through a regulatory framework that sets out and ensures payment, and to date there are still gaps in providing such guarantees, particularly through feed-in-tariffs or other incentives.

To accelerate Morocco's transition to a cleaner and greener economy, the Moroccan government has designed an investment plan that will tap USD150 million in financing from the Clean Technology Fund (CTF- Law No. 40-08) to reach financial closure for investments that will capitalize on Morocco's world-class renewable energy resources. CTF funds will be deployed to effectively bring down the cost of low carbon growth in Morocco, and will mobilize an additional USD 2.5 billion from many financial sources such as the Hassan II Fund, Kingdom of Saudi Arabia, United Arab Emirates, African Development Bank, and World Bank Group (IBRD, IFC). These CTF co-financed projects are expected to achieve 33.8 MtCO₂e cumulative GHG emissions savings and reductions.²⁰¹



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In addition to these illustrative examples of Moroccan legal innovations and institutions, several

¹⁹⁸ See Grantham Research Institute on Climate Change and the Environment, page on Law No. 13-09 on Renewable Energy regulated by Decree 2-10-578 <http://www.lse.ac.uk/GranthamInstitute/law/law-13-09-on-renewable-energy-regulated-by-decree-2-10-578/>

¹⁹⁹ Rosa Mottershead 26 January 2016 'Masen's NOOR solar energy projects – the achievements of Morocco's Solar Plan' <http://www.insideafricalaw.com/blog/masen-s->

[noor-solar-energy-projects-the-achievements-of-morocco-s-solar-plan](http://www.insideafricalaw.com/blog/masen-s-noor-solar-energy-projects-the-achievements-of-morocco-s-solar-plan)

²⁰⁰ Ilias Tsagas 25 November 2015, 'Morocco's Solar Situation : to PV or to CSP ?'

<http://www.renewableenergyworld.com/articles/2015/11/morocco-s-solar-situation-to-pv-or-to-csp.html>.

²⁰¹ Climate Investment Fund 'Morocco' <https://www-cif.climateinvestmentfunds.org/country/morocco>.

others hold great importance and relevance for the implementation of the renewable energy target in the NDC of Morocco, including the legal framework that governs the conduct of the Ministry of Energy, Mines, and Sustainable Development (le Ministère de l'Energie, des Mines et du Développement Durable, MEMDD), which is entrusted with implementing the governmental policy regarding not only supplying and diversifying energy sources, but also developing renewable energy and improving energy efficiency.

To reduce energy consumption by 15% by 2030

Morocco's NDC includes plans to reduce energy consumption in buildings, transport and industry by 15% by 2030, and to complete the phase out of fossil fuel subsidies. Industry will account for 48% of the reduction in consumption. Law No. 47-09 (known as the “Law on energy efficiency”) dated 29 September 2011 is the primary legal instrument strengthening energy efficiency in key economic sectors (such as the transport and construction sectors).²⁰²

The Law on Energy Efficiency lays the foundation for future thermal regulation, introducing mechanisms to reduce energy usage, energy wastage and to set minimum energy efficiency standards that must be met by all appliances and electrical equipment sold. It also encourages the use of solar water heaters and energy-saving

light bulbs. It makes energy audits mandatory for companies and institutions in the production, transmission and distribution of energy. An energy impact study must also be performed for new construction and urban projects.

With regard to the conservation of energy in industry, the Moroccan government has implemented various incentives to encourage energy efficient buildings. In accordance with the Energy Efficiency Building Code Program (*le programme de Code d'Efficacité Energétique dans le Bâtiment*, CEEB), Morocco introduced mandatory minimum energy efficiency performance requirements in buildings.²⁰³ Within the broader national energy efficiency program, Morocco also adopted Thermal Regulation for Buildings (*Réglementation thermique dans le bâtiment au Maroc*, RTBM) with the aim of reducing energy needs for heating and cooling,²⁰⁴ through better climate control and less window, wall, and ceiling draught.

In 2009, the National Energy Efficiency Program was launched and aimed at reducing electricity usage by reducing fuel subsidies in the construction, transportation and industrial sectors. Reducing energy usage was also taken into consideration through setting minimum energy requirements regarding all appliances and electrical equipment sold (the 20-20 initiative) and implementing daylight saving in the summer (moving to GMT+1).

²⁰² International Energy Agency (2014) 'Morocco 2014, Energy Policies Beyond IEA countries', OECD/IEA, Paris, <https://www.iea.org/publications/freepublications/publication/Morocco2014.pdf>, p. 42.

²⁰³ AMEE, 'CEEB Programme' <http://www.aderee.ma/index.php/en/expertise/programmes-integres-en/programme-ceeb-en>. ADEREE and UNDP (2010) 'Programme National d'Efficacité Energétique Dans le Bâtiment' http://www.ceeb.ma/PDF/R_A_2010.pdf;

UNDP Morocco, 'Mid-Term Evaluation Report on the UNDP/GEF Project Energy Efficiency Improvements In Residential Buildings and Energy Efficiency Improvement in Commercial and Hospital Buildings In Morocco' (2013) http://procurement-notices.undp.org/view_file.cfm?doc_id=35481.

²⁰⁴ AMEE 'Energy efficiency in buildings' <http://www.aderee.ma/index.php/en/expertise/efficacite-energetique-en/batiment-en>.

In this sense, and in accordance with the decree N° 2-13-874 (15 October 2014) concerning the energy efficiency performance of buildings' construction, Morocco launched a mosques program with low power consumption that contributes to achieving the goals of the national energy strategy, specifically in reducing energy consumption by 12% in 2020 and 15% in 2030. This ambitious program aims at rehabilitating 15,000 mosques under the management of the Ministry of Endowments and Islamic Affairs (MHAI). It was the result of collaboration between the MHAI, MEMSD and the AMEE, with technical support from the German Cooperation GIZ. The mosques program mirrors other countries' policies on establishing an exemplary role for public buildings in terms of their energy efficiency.²⁰⁵ The mosques program could be expanded to cover other civil buildings.

With regards to the building sector, additional measures could be adopted to further improve energy efficiency in Morocco. For example, energy performance certificates that provide information about the energy performance of a building (in line with minimum energy efficiency performance requirements set by the CEEB) and practical advice on improving such performance to buyers and renters of buildings. When implementing this scheme in the European Union, training sessions for independent certifiers and information campaigns for owners and tenants were an important complement to the certificates.²⁰⁶ In addition, smart metering and informative billing on

energy usage can help build awareness among energy consumers. Bills should be based on actual consumption and provide comparisons of energy use between years.

The Moroccan National Agency for the Development of Renewable Energy and Energy Efficiency,

For the transportation sector, the National Climate Change Plan established mitigation measures. These include measures to change the transportation mix and fuels used. Since 2009 the Ministry of Energy and Mining requires the use of Gasoil 50ppm and unleaded petrol. In addition, AMEE has developed an employee commute program in the administrative district of Agdal, in Rabat, with the objective of encouraging energy efficient transport systems (public transport, car-sharing, walking, etc.).²⁰⁷ Other measures include the introduction of compulsory technical inspections every year for all vehicles. Finally, Morocco has initiated a process to modernise vehicles by prohibiting the import of vehicles older than five years and renewing the freight transport fleet. A sticker licence has also been introduced for gas guzzlers and a reduction of 2.5% of excise duties for hybrid vehicles was implemented.²⁰⁸

To afforest 50,000 ha of land/year

To assist in supporting the delivery of this commitment, relevant institutions include the High Commission for Water, Forests and Desertification Control, and the relevant laws and

²⁰⁵ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency.

²⁰⁶ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings.

²⁰⁷ AMEE 'Transport'

<http://www.aderee.ma/index.php/en/expertise/efficacite-energetique/transportee>.

²⁰⁸ International Energy Agency (2014) *Morocco 2014 – Energy Policies Beyond IEA countries*, <https://www.iea.org/publications/freepublications/publication/Morocco2014.pdf> p.43

policies include the Reforestation Master Plan (1994) that was launched with the aim of achieving 1.5 million ha of reforestation by 2030.

As an illustrative example, responding to Morocco's commitment to afforest 50,000 hectares of land/year, legislation such as the Dahir of 10 October 1917 on the Exploitation of Forests will enable the implementation of more integrated forestry management. The Dahir of 1 July 1915 introduced the concept of public domain and state ownership of forests and the Dahir of 10 October 1917 emphasised the urgent need for the state to safeguard and develop the forests.²⁰⁹ Morocco also adopted the United Nations Convention to Combat Desertification Control in 1994. The convention prescribes a participatory approach in addressing areas and populations hit by degradation. Furthermore, Morocco's National Action Plan to combat desertification and drought is an ongoing framework that aims to integrate all plans in achieving sustainable development.

With regard specifically to forests and forestry, Morocco has encouraged afforestation and reforestation on state, collective and private forest lands since 1950 and a National Forestry Fund came into force by the Dahir of 12 September 1949 which entailed levying a 10% tax on sale price of key forest products.²¹⁰ In addition, between 2009 and 2012, the Moroccan government has played an important role in the Adaptation to Climatic Change in

Morocco for Resilient Oasis (PACC/Oasis) project, part of the "Programme Africain d'Adaptation au Changement Climatique". The results of this project included the elaboration of reports that covered: climatic scenarios for the oasis zones for 2021-2050, a vulnerability assessment, evaluation of possible risks (flooding, drought, fire and locusts), establishment of automatic climate stations, establishment of pilot sites, and a communication strategy.

Finally, Law No. 06-10 of 18 February 2010 established the National Agency for the Development of Oases and Argan Zones (ANDZOA, or l'Agence Nationale pour le Développement des Zones Oasiennes et de l'Arganier) which is mandated to protect and develop argan forests and oases in degraded landscapes. Morocco intends to plant 43,000 hectares of argan tree orchards and promote argan agriculture as a priority activity to reduce GHG emissions, foster sustainable development, and build resilience of local communities.

Further challenges affecting the implementation of Morocco's NDC priorities and initial recommendations

The road to effective implementation of the ambitious²¹¹ Moroccan NDC is not without significant roadblocks. On the one hand, steered by strong faith in sustainable approaches at the highest level of the Kingdom,²¹² Morocco has an honourable environmental

²⁰⁹ FAO (2013) 'Challenges in adopting an integrated approach to managing forest and rangelands in the Near East Region.' <http://www.fao.org/3/a-i3165e.pdf>

²¹⁰ FAO (2013) 'Challenges in adopting an integrated approach to managing forest and rangelands in the Near East Region.' <http://www.fao.org/3/a-i3165e.pdf>

²¹¹ The Moroccan NDC has been ranked by the Climate Action Tracker as one of only 5 "Sufficient" (I)NDCs among a selection of 33 representative NDCs <<http://climateactiontracker.org/countries.html>>

²¹² "Our country is among the first to have played a part in raising global awareness about climate change. Our initial contribution goes back to when I attended the Rio Earth Summit in 1992, as Crown Prince and as head of the Moroccan delegation.", King Mohammed VI, November 15th 2016,

<<https://www.morocccoworldnews.com/2016/11/201425/kin-g-mohammed-vis-full-speech-cop22-high-level-segment/>>

performance according to international metrics.²¹³ On the other hand, various hard-wearing barriers must be overcome.

First, the pressure to implement will diminish with time from a communications perspective as the international community's attention drifts away from the Kingdom towards the next host of the COP/CMP/CMA and beyond.

Second, the administrative culture in the Kingdom remains very siloed. Substantial progress must be made in developing meaningful inter-ministerial efforts to design and implement NDC iterations at the highest levels of ambition.

Third, the Kingdom is confronted with a structural and endemic disconnect between rule making and implementation in a country where rule of law remains a work in progress.²¹⁴ The recent launch²¹⁵ of the Moroccan Police for the Environment²¹⁶ exemplifies this issue. Comprising 40 police officers, the first Promotion will include Regional officers to cover the 12 administrative regions. The scope of this mission has led some in the media to conclude that this new police force will “drain public sympathy just as quickly as it will be overwhelmed by the scope of the challenge.”²¹⁷

Fourth, a recently redrawn advanced regionalized process²¹⁸ has yet to be fully owned by the various stakeholders. Accelerating the vertical and horizontal integration of that process will be instrumental to the implementation of the NDC, in particular for the adaptation components. Significant disparity exists between the regions; two regions, with support from the GIZ, have taken the lead in adaptation planning: the regions of Marrakech-Safi and Sous-Massa.

Fifth, the tension between economic development and the preservation of the environment will increase in a context where the Kingdom is making big strides to solidify its role as an African juggernaut. After rejoining the African Union,²¹⁹ the Kingdom has just expressed its desire to join the Economic Community of African States.²²⁰ Of particular interest is the behemoth project of a 4000km long gas pipeline and its environmental impact.²²¹

Finally, the State Secretariat in Charge of Sustainable Development in Morocco is within the Ministry of Energy, Mines, and Sustainable Development. As a consequence, its convening power and influence with the various relevant public and private stakeholders is perceived by some as relatively lacking. Therefore, the implementation of the Moroccan NDC,

²¹³ Ranked 64th out of 180 Countries in the *Global Metrics for the Environment: Environmental Performance Index*, Yale University, 2016, p. 18

²¹⁴ Morocco is ranked 62nd out of 113 countries surveyed in the 2016 Rule of Law index, World Justice Project, <<http://data.worldjusticeproject.org>>

²¹⁵ *La police de l'environnement lancée au Maroc*, February 24th 2017, <<http://www.h24info.ma/maroc/societe/la-police-de-lenvironnement-lancee-au-maroc/50980>>

²¹⁶ *Décret n°2-14-782 du 19 Mai 2015*

²¹⁷ *Lancement officiel de la police de l'environnement à Rabat*, February 24th 2017, Médias 24, <<https://www.medias24.com/MAROC/SOCIETE/171181-La-police-de-l-environnement-lancee-a-Rabat.html>>

²¹⁸ *Décret n°2.15.40 du 20 février 2015, fixant le nombre des régions, leurs dénominations, leurs chefs-lieux ainsi que les préfectures et provinces qui les composent*, Bulletin Officiel n° 6340 du 05 mars 2015

²¹⁹ *Morocco rejoins African Union after 33-year absence*, Financial Times, January 30th 2017 <<https://www.ft.com/content/6479ea72-e718-11e6-893c-082c54a7f539>>

²²⁰ *Le Maroc demande son adhésion à la CEDEAO*, Jeune Afrique, February 25th 2017, <<http://www.jeuneafrique.com/407234/politique/maroc-demande-adhesion-a-cedeao/>>

²²¹ *All you need to know about the Morocco-Nigerian pipeline project*, <<https://www.morocccoworldnews.com/2016/12/202964/morocco-nigeria-build-pipeline-linking-countries/>>

mostly a product of the Environment Ministry of Morocco, will be strongly contingent on the degree of ownership felt towards it by more established ministries, such as the Ministry of Agriculture and the Ministry of the Economy of Finance.

Conclusion and Legal and Institutional Recommendations to Enable Enhanced Finance Flows Consistent with NDC-Guided Pathways in Jordan, Tunisia and Morocco

NDCs are developed and approved in an environment of existing laws, regulations, policies and institutions that already seek to achieve many of the priority objectives identified for climate change mitigation and adaptation. This report is the culmination of an initial pilot study mapping existing laws and institutional arrangements, and highlights potential areas for further reform. NDCs should provide the impetus and inspiration for this reform and introduction of additional measures, filling remaining legal gaps, addressing inconsistencies and strengthening cohesion in the legal framework and in its implementation.

While it is clear that failure by a country to achieve or implement the commitments in its NDC would not put that country in breach of its Paris Agreement obligations, once a country ratifies the Paris Agreement, its NDC becomes binding in the sense that it can only be revised upwards. In addition, the laws that help to deliver on the NDC, such as those documented in this report, are binding.

More in-depth technical and operational gap analysis, followed by a participatory technical assessment of legal and institutional strengths and weaknesses across the main legislative instruments and institutions in this sector, would be helpful to identify new opportunities for reform and capacity-building that could facilitate future investment to achieve NDC targets.

In the country analyses, sector-specific barriers and opportunities for achievement of NDC priorities in Jordan, Tunisia and Morocco have been provided. This concluding section summarises the legal gaps and how the legal framework could be strengthened to better incentivise investment for the selected priority sectors (especially on renewable energy for Tunisia and Jordan – with Morocco as a ‘good practice’ example, energy efficiency in Jordan, Tunisia and Morocco, public transport in Jordan, and water in Jordan and Tunisia – with Tunisia as a ‘good practice’ example.). The national analyses also reveal several common cross-sectoral barriers (legal and institutional) to achieving NDC targets. Drawing these out should encourage and enable implementation of all NDC commitments. It is hoped that these country-specific recommendations will provide specific directions for further reform in all three countries.

Jordan

Legal gaps for renewable energy investment in Jordan:

- A lengthy technical and administrative process before a renewable energy project developer can obtain the relevant licenses.
- Prohibition on private-private transmission.
- Limited awareness among domestic and international

investors with regards to the availability of incentives.

Implementation roadmap for legal reform to achieve renewable energy target:

- Streamlining, clarification and transparency for administrative processes.
- Renewable energy law should be reformed to allow a private entity to produce electricity from renewable energy and sell the output to consumers located domestically or abroad (private-private transmission).
- Private sector should seek to gain a greater understanding of the system and incentives; Government may be able to assist through regional workshops and guidelines specifically for private investors.

Legal gaps for energy efficiency investment in Jordan:

- Limited monitoring and enforcement of energy efficiency regulations.
- Lack of awareness of financial incentives.
- Reduce the risks for investors and offset the up-front cost of energy conservation projects.

Implementation roadmap for legal reform to achieve energy efficiency target:

- Improve the monitoring and enforcement of energy efficiency regulations through strengthened capacity among government regulators.
- Improve communications with stakeholders to facilitate the uptake of existing financial incentives and clarify institutional roles.
- Introduce energy performance certificates that provide

information about the energy performance of a building.

- Regular inspections of energy-intensive appliances, particularly air conditioning units.
- Jordan should establish funding mechanisms and financial incentives to complement the existing fund set up under Article 12 of the REEL.
- The regulatory platform may benefit from careful review to ensure that its instruments can be applied more coherently.

Legal gaps for sustainable transport investment in Jordan:

- Limited and fragmented inter-Ministerial coordination, unguided by comprehensive planning, has led to random urbanization, which limits the ability to develop a public transportation sector.
- Significant administrative delays characterise the municipal and national planning process.
- There are no laws or regulations on establishing a zero emission public transport fleet.
- Insufficient engagement with PPP model, including limited public financial incentives, to modernise the transport industry.

Implementation roadmap for legal reform to achieve sustainable transport target:

- Establish an inter-Ministerial and multi-level committee on urbanisation, to improve national and local-level government urban planning.
- Streamline municipal and national planning processes, to reduce the amount of time private investors must wait for approval.

- Provide tax incentives to upgrade public vehicles to a zero-emission fleet.
- Reduce energy subsidies on fossil fuel-based vehicle fuels.
- Government must increase financial and political support for public transport PPPs, to lower the risk of investment for the private sector.

Legal gaps for agricultural adaptation investment in Jordan:

- Overlaps between the Agriculture Law and Environmental Protection Law in terms of land degradation result in unclear enforcement responsibilities and recourse pathways.
- Fragmented institutions prevent the government from adequately protecting farmers from climate change. Reducing disaster risk falls under the defense portfolio, while the land-use ministries (primarily agriculture and environment) are responsible for enacting laws to protect farmers from climate change.

Implementation roadmap for legal reform to achieve agricultural adaptation target:

- Harmonise the Agriculture Law and Environmental Protection Law to clarify where responsibility for agricultural land and forest land degradation lies.
- Harmonise the mandates of Ministries responsible for climate change risk and farming.
- Raise national and local awareness of the importance of the agriculture sector for climate change adaptation.

Legal gaps for water investment in Jordan:

- Government agencies (WAJ and JVA) have insufficient budgets to invest in effective adaptation of wastewater and irrigation infrastructure. In addition, their authority overlaps with other ministries and laws are not being enforced.
- Limited legal and regulatory framework for water management.

Implementation roadmap for legal reform to achieve water target:

- Private sector should take over the operation of infrastructure and services in both wastewater and irrigation infrastructure and services.
- Amendments to water management laws must be made, to prevent unnecessary overuse of water. This includes amendments to the Groundwater Bylaw to provide specific quotas and safe yield amounts for groundwater extracted from aquifers.
- Develop Regulations that address the environmental and health consequences of grey water, and restrict other activities that waste water.
- Introduce financial incentives for water conservation, such as loans for installing equipment.

Legal gaps for monitoring, reporting and verification:

- Jordan does not yet have a fully functioning MRV system to effectively implement the Paris Agreement.

Implementation roadmap for legal reform to achieve effective MRV:

- Introduce relevant articles into the Environmental Law and

assign institutional responsibility for the MRV system: either to the Ministry of the Environment, or to the proposed Climate Change Unit.

Tunisia

1. Legal gaps for renewable energy investment in Tunisia:

- Lack of transparency in the regulation of the renewable energy sector, for example discretionary setting of tariffs for the purchase of renewable energy for local consumption and excess self-generation, as well as *ad hoc* contracting with IPPs.
- The monopoly and vertical integration of STEG, leading to inefficiencies in governance and lack of competition.
- Restrictions on IPPs and private-private transmission, as all renewable energy must be sold to STEG.
- Limited investment incentives in the Renewable Energy Law 2015, particularly for small-scale renewable energy operators, who are required to pay for network connection costs, without a feed-in-tariff to equalize costs, and who face maximum capacity limits on renewable energy projects that are low and not in line with international standards.
- No independent energy regulator.
- Inefficient energy subsidies on fossil fuel-based energy sources, resulting in market distortion.

Implementation roadmap for legal reform to achieve renewable energy target:

- Clarification and transparency for processes such as tariff setting and contracting, including standardised criteria for determining the price to be paid for surplus electricity, and a standard contract.
- Effective regulation of STEG to ensure it does not have conflicts of interest regarding the connection of private renewable energy, and to allow private investors to be more competitive with STEG.
- Reforming energy subsidies may also reduce STEG's monopoly power, through limiting the deficits that are offset by the Government.
- Renewable energy law should be reformed to allow a public or private entity to produce electricity from renewable energy and sell the output to consumers located domestically or abroad (private-to-private).
- Further incentives should be introduced, such as the introduction of a feed-in-tariff and defraying the costs of network connections.
- Simplify land ownership arrangements. Tunisia's renewable energy law already envisages priority development zones. Jordan could be used as an example of how to implement this type of measure, as the tender process in the REEL offers suitable locations that have already been identified by government.
- A fully independent energy regulator should be established, and Jordan's Energy Regulatory Commission may act as inspiration for Tunisia in this regard.

Legal gaps for energy efficiency investment in Tunisia:

- Energy subsidies mask the true cost of electricity, reducing the incentive to rationalise energy consumption.
- Construction and infrastructure regulations make unclear reference to energy efficiency standards.
- Lack of knowledge of new construction and operational techniques, as well as energy efficiency measures among builders and owners.
- Fragmentation of laws between those governing sustainable energy efficient investment, public transport, and construction.
- Energy efficiency is often not included in environmental impact assessment (EIA) mandates.

Implementation roadmap for legal reform to achieve energy efficiency target:

- Remove inefficient energy subsidies, with higher energy costs incentivising more conservative use of energy.
- Expand the mandatory energy performance certificate from only “important” types of buildings to all buildings, to provide all building owners and renters with important information on the energy efficiency of their buildings.
- Introduce smart meters and informative billing practices.
- Capacity building of national construction companies on new techniques would help to familiarise the domestic market.
- Urban planning codes should more effectively integrate energy efficiency components in city

policies, improving interactions between social (housing, mobility), economic (growth, tourism, transport), environmental (the sustainability of the resource), spatial and institutional considerations.

- Explicit reference to energy efficiency in the EIA criteria would ensure that this element is addressed by environmental agencies reviewing infrastructure projects.
- Greater political and financial support to local communities that have demonstrated an effort to implement projects related to energy efficiency.

Legal gaps for improved resilience of agriculture and other land uses in Tunisia:

- Inter-sectoral fragmentation among land use Ministries leads to incomplete and segregated management plans for sustainable development.
- Weak implementation and enforcement of laws to protect agricultural lands, including the ban on unregulated changes of land-use.
- Different land use issues are addressed in an isolated manner, such as GHG mitigation potential and erosion of forests, resulting in linkages and mutually-beneficial solutions being overlooked.

Implementation roadmap for legal reform to achieve agriculture and land use mitigation and adaptation target:

- Establish an inter-Ministerial Committee on land use, for the Ministries responsible for agriculture, forestry, land, etc. to improve whole-of-Government strategies and planning on

landscapes level land use management plans.

- Increased capacity to monitor and enforce land-use change.
- Improve procedures for stakeholder engagement, monitoring, transparency and public participation in the implementation of land laws.
- Integrate discussions on land use management to combine strategies and proposals for measures to achieve significant GHG emission mitigation targets with measures to slow advancing desertification (for example).
- Amend Article 1 of the Code referring to the forest heritage to link its protection and development provisions more directly to actions that seek to address deforestation and climate change.

Legal gaps on water investment in Tunisia:

- Implementation, including monitoring and enforcement, of water management is often challenging due to intense politicisation of water resources (urbanisation vs agriculture vs industry). The introduction of a rationing system that would limit the use of water for certain end uses, for example, has been extremely challenging.

Implementation roadmap for legal reform to achieve water mitigation and adaptation target:

- Increased transparency and regulatory safeguards in the water sector in light of the sector's commitments.
- Increase involvement of users in water planning and management could improve

performance and lead to greater buy-in of different water users.

- Strengthen the integration of climate change impacts in Tunisia's water governance strategy.

Legal gaps on monitoring, reporting and verification:

- Sector-specific and scattered monitoring and reporting regimes for different environmental impacts.
- Implementation roadmap for legal reform to achieve effective MRV.
- Establish more frequent and robust MRV systems, based on agreed assessment frameworks for the Paris Agreement. These should include responsibility for inventory of greenhouse gases to the ANME (in close collaboration with other relevant stakeholders) and should cover emissions from all sectors: energy, industrial processes, land use, land-use change and forestry, waste, agriculture. There is also a need to develop a single agreed-upon method of data computation across all of these sectors.

Morocco

Legal gaps for renewable energy investment in Morocco:

- There is no remuneration policy framework for solar energy use, to help projects struggling with cost effectiveness, especially with international oil prices reaching record lows. There are gaps in providing financial guarantees, particularly through feed-in-tariffs or other incentives.

Implementation roadmap for legal reform to achieve renewable energy target:

- Establish financial guarantees (such as feed-in-tariffs or other incentives) in a regulatory framework that sets out criteria for and ensures payment.

Legal gaps for energy efficiency investment in Morocco:

- Lack of information among building owners and renters about the energy efficiency of their buildings.

Implementation roadmap for legal reform to achieve energy efficiency target:

- Provide training sessions for independent certifiers and information campaigns for owners and tenants on energy efficiency measures and savings.
- Introduce energy performance certificates that provide information about the energy performance of a building (in line with minimum energy efficiency performance requirements set by the CEEB)
- Smart metering and informative billing should be introduced, to improve the education of building owners and renters on how much energy they consume.
- The mosques program could be expanded to cover other civil buildings, so that public building can be held up as exemplary models to follow.

Legal gaps for afforestation investment in Morocco:

- Lack of inter-Ministerial coordination, although such coordination is envisaged in Morocco's National Action Plan

to combat desertification and drought.

Implementation roadmap for legal reform to achieve afforestation target:

- Ensure integration of all plans to achieve sustainable development of landscapes.

Institutional responsibility for NDC implementation

- Establish a body with a specific mandate to supervise, coordinate and review climate change policies, measures and action plans across different sectors. This body could sit within either a central governmental authority (Ministry of Finance or Treasury) or the Ministry for the Environment.
- Increase specific incentives for environmentally-sound investments and projects.
- Establish nation-wide and cross-sectoral robust MRV systems, based on agreed assessment frameworks for the Paris Agreement.
- Spread responsibility for climate change from sectoral and environmental government agencies to agencies responsible for investment and taxation decisions, such as the national investment centres.
- Reduce inter-Ministerial divergences in relation to jurisdiction over key environmental issues such as water, waste management, and energy.
- Streamline governmental bureaucracy and improve transparency.

ANNEX 1: ANALYTICAL TABLES FROM COUNTRY STUDIES OF LEGAL AND INSTITUTIONAL FRAMEWORKS

Regulatory & Institutional Enablers of NDC Implementation for Jordan

Priority NDC Commitment / Sector	Relevant Regulations (with links)	Implementing Institutions / Mandates (with links)	Guiding Policies / Standards (with links)	Notes on barriers, effectiveness, coherence / integration mechanisms, monitoring/reporting /verification, measures recourse
1. To increase renewable energy from 2% of overall energy in 2013 to 10% in 2020	<p>Law no 13/2012, Renewable Energy and Energy Efficiency Law (As Amended)²²²</p> <p>Law no 64 / 2002 for Electricity²²³</p> <p>Law no 42/ 2007 Nuclear Energy Law²²⁴</p> <p>The Environmental Protection Law No.6 of 2017</p>	<p>Ministry of Energy and Mineral Resources²²⁵</p> <p>The Jordanian Electric Power Company limited (JEPCO)²²⁶</p> <p>Jordanian Atomic Energy Commission²²⁷</p> <p>Ministry of the Environment²²⁸</p>	Renewable Energy Projects ²²⁹	<p>Political Barriers – the Refugee crisis</p> <p>Financial Barriers - Heavy indebtedness, and budget deficit</p> <p>Administrative & Legislative Barriers - normally any dispute in the investment context is to be settled via arbitration, and alternatively via national judicial channels²³⁰</p>
2. To improve energy efficiency by 20% by 2020	<p>Law no 13/2012, Renewable Energy and Energy Efficiency Law (As Amended)²³¹</p> <p>Law no 64 / 2002 for Electricity²³²</p> <p>The Environmental Protection Law No.6 of 2017</p>	<p>Ministry of Energy and Mineral Resources²³³</p> <p>The Jordanian Electric Power Company limited (JEPCO)²³⁴</p> <p>Ministry of the Environment²³⁵</p>		<p>Political Barriers – the Refugee crisis</p> <p>Financial Barriers - Heavy indebtedness, and budget deficit</p>

²²² <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/renewablelaw.pdf>.

²²³ <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/%D9%83%D9%87%D8%B1%D8%A8%D8%A7%D8%A1.pdf>.

²²⁴ <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/nuclearlaw.pdf>.

²²⁵ <http://www.memr.gov.jo/>.

²²⁶ http://www.jepco.com.jo/jepco/index.php?option=com_content&view=frontpage&Itemid=1&lang=en.

²²⁷ <http://www.jaec.gov.jo/>.

²²⁸ <http://www.moenv.gov.jo/en/pages/default.aspx>.

²²⁹ <http://www.memr.gov.jo/Pages/viewpage.aspx?pageID=157>.

²³⁰ <http://www.jcdr.com/pdf/3-ar.pdf>.

²³¹ <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/renewablelaw.pdf>.

²³² <http://www.memr.gov.jo/EchoBusV3.0/SystemAssets/PDFs/AR/Laws/%D9%83%D9%87%D8%B1%D8%A8%D8%A7%D8%A1.pdf>.

²³³ <http://www.memr.gov.jo/>.

²³⁴ http://www.jepco.com.jo/jepco/index.php?option=com_content&view=frontpage&Itemid=1&lang=en.

²³⁵ <http://www.moenv.gov.jo/en/pages/default.aspx>.

3. To improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet	Law of public Transport/ 2012 ²³⁶ Law of Railways/ 2012 ²³⁷ The Environmental Protection Law No.6 of 2017	Ministry of Transport ²³⁸ Land Transport Regulatory Commission ²³⁹ Ministry of the Environment ²⁴⁰	Jordan long-term national transport strategy project ²⁴¹ Ministry of Transport – Executive plan 2015-2017 ²⁴²	Political Barriers – the Refugee crisis Financial Barriers - Heavy indebtedness, and budget deficit Administrative Barriers Legislative Barriers - Random Urbanization and non-comprehensive planning
4. To improve the agricultural sector's contributions to adaptation	Law no 13/ 2015 Law of Agriculture ²⁴³ Law no 19/ 1988 as amended by the Law no 3/ 2001 Jordan Valley Authority ²⁴⁴ The Environmental Protection Law No.6 of 2017	Ministry of Agriculture ²⁴⁵ Jordan Valley Authority ²⁴⁶ Ministry of the Environment ²⁴⁷	National Strategy for Agriculture Development ²⁴⁸ National Strategy Document for Agriculture Development 2016 2025 ²⁴⁹	Financial Barriers - Heavy indebtedness, and budget deficit Random Urbanization and non-comprehensive planning
5. To adopt adaptation measures and programs for the water sector; including	Law no 52/ 2006 for the Protection of the Environment (English Version) ²⁵⁰ Law no 13/ 2015 Law of Agriculture ²⁵¹	Jordan Water Company (JWC) ²⁵³ Ministry of the Environment ²⁵⁴	Energy Efficiency and Renewable Energy Policy for the Jordanian Water Sector ²⁵⁵ Waste Water Policy ²⁵⁶	Political Barriers - Syria Regional Refugee Response ²⁵⁸ Water scarcity and refugee pressures in Jordan ²⁵⁹

²³⁶ <http://www.ltrc.gov.jo/?q=ar/node/207#.V64nlfI94fJ>.

²³⁷ http://www.ltrc.gov.jo/sites/default/files/qnwn_lskk_lhdydy_rqm_24_lsn_2012_lsdry_fy_ljryd_lrsmy.pdf.

²³⁸ <http://www.mot.gov.jo/Default.aspx>.

²³⁹ <http://www.ltrc.gov.jo/?q=en>.

²⁴⁰ <http://www.moenv.gov.jo/en/pages/default.aspx>.

²⁴¹ <http://www.mot.gov.jo/EchoBusV3.0/SystemAssets/PDFEN/longtermstrategy/%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D9%82%D8%B7%D8%A7%D8%B9%20%D8%A7%D9%84%D9%86%D9%82%D9%84%20%D8%A7%D9%84%D9%88%D8%B7%D9%86%D9%8A%D8%A9%20%D8%B7%D9%88%D9%8A%D9%84%D8%A9%20%D8%A7%D9%84%D9%85%D8%AF%D9%89%20%D8%A7%D9%86%D8%AC%D9%84%D9%8A%D8%B2%D9%8A.pdf>.

²⁴² <http://www.mot.gov.jo/EchoBusV3.0/SystemAssets/imagesAR/PDFsAR/%D8%A7%D9%84%D8%AE%D8%B7%D8%A9%20%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D9%88%D8%B2%D8%A7%D8%B1%D8%A9%20%D8%A7%D9%84%D9%86%D9%82%D9%84%20-2015-2017.pdf>.

²⁴³ <http://www.moa.gov.jo/Portals/0/law/%D9%82%D8%A7%D9%86%D9%88%D9%86%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D8%A9%20%D8%B1%D9%82%D9%85%2013%20%D9%84%D8%B3%D9%86%D8%A9%202015.pdf>.

²⁴⁴ <http://www.jva.gov.jo/sites/en-us/Documents/Jordan%20Valley%20Development%20Law.pdf>.

²⁴⁵ <http://www.moa.gov.jo/ar-jo/home.aspx>.

²⁴⁶ <http://www.jva.gov.jo/sites/en-us/default.aspx>.

²⁴⁷ <http://www.moenv.gov.jo/en/pages/default.aspx>.

²⁴⁸ <http://www.moa.gov.jo/Portals/0/site%20Pdf/%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D9%8A%D8%A9.pdf>.

²⁴⁹ [http://www.moa.gov.jo/Portals/0/pdf/policy_studies/%D9%88%D8%AB%D9%8A%D9%82%D8%A9%20%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D8%A7%D9%84%D9%88%D8%B7%D9%86%D9%8A%D8%A9%20%D9%84%D9%84%D8%AA%D9%86%D9%85%D9%8A%D8%A9%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D9%8A%D8%A9%202016-2025%20\(1\)%20\(1\).pdf](http://www.moa.gov.jo/Portals/0/pdf/policy_studies/%D9%88%D8%AB%D9%8A%D9%82%D8%A9%20%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D8%A7%D9%84%D9%88%D8%B7%D9%86%D9%8A%D8%A9%20%D9%84%D9%84%D8%AA%D9%86%D9%85%D9%8A%D8%A9%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D9%8A%D8%A9%202016-2025%20(1)%20(1).pdf).

²⁵⁰ <http://www.moenv.gov.jo/En/LegislationAndPolicies/Legislation/Regulations/Pages/EnvironmentalProtectionLaw.aspx#.V6MpGfI94fI>.

²⁵¹ <http://www.moa.gov.jo/Portals/0/law/%D9%82%D8%A7%D9%86%D9%88%D9%86%20%D8%A7%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D8%A9%20%D8%B1%D9%82%D9%85%2013%20%D9%84%D8%B3%D9%86%D8%A9%202015.pdf>.

²⁵³ <http://www.miyahuna.com.jo/Home.aspx>.

²⁵⁴ <http://www.moenv.gov.jo/en/pages/default.aspx>.

²⁵⁵ <http://www.jva.gov.jo/sites/en-us/SiteCollectionDocuments/Energy%20Policy.pdf>.

²⁵⁶ <http://www.mwi.gov.jo/sites/en-us/SitePages/Water%20Policies/Waste%20Water%20Policy.aspx>.

²⁵⁸ <http://data.unhcr.org/syrianrefugees/country.php?id=107>.

²⁵⁹ https://www.mercycorps.org/sites/default/files/MercyCorps_TappedOut_JordanWaterReport_March204.pdf.

measures related to groundwater protection, surface water development, demand management and monitoring water quality and quantity.	<p>Law no 19/ 1988 as amended by the Law no 3/ 2001 Jordan Valley Authority²⁵²</p> <p>The Environmental Protection Law No.6 of 2017</p>		Irrigation Water Policy ²⁵⁷	Legislative Barriers – water crimes and week punishments
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Regulatory & Institutional Enablers of NDC Implementation for Tunisia

Priority NDC Commitment / Sector	Relevant Regulations (with links)	Implementing Institutions / Mandates	Guiding Policies / Standards (with links)	Notes on barriers, effectiveness, coherence / integration mechanisms, monitoring/reporting/verification, measures recourse
1. To support the increased use of renewables via the Tunisian Solar Plan, raising the share of renewables from 4% in 2015 to 30% in 2030. To achieve an installed renewable energy capacity of 3,815 MW in 2030, including 1,755 MW for wind power, 1,610 MW for solar photovoltaic (PV) and 450 MW for concentrated solar power (CSP).	-Loi du 2 aout 2004, modifiée en 2009 relative à la maîtrise de l'énergie.	-Agence nationale de maîtrise de l'énergie -Centre d'information sur l'énergie durable et l'environnement -Task Force Industrie-énergie chargée de dynamiser le marché du MDP. -L'autorité Nationale Désignée -OTED	-Stratégie nationale de développement durable -Le plan d'orientation stratégique 2016-2020 -Plan solaire tunisien -Mécanisme de Développement Propre (MDP)	-Les normes sur les valeurs limite d'émission sont en deça des normes européennes - Harmoniser les normes -Certains secteurs polluants ne font pas l'objet de normes -Cadre incitatif insuffisant pour le développement des ENRs. - Utiliser la taxation environnementale dans un objectif incitatif -Intégrer dans le projet code d'investissement des primes spécifiques en faveur de la maîtrise de l'énergie -Inadéquation des règles des marchés publics par rapport aux exigences de flexibilité du marché du carbone -Les projets éligibles au MDP sont limités -Faible mobilisation des opérateurs privés dans les projets MDP.
2. To promote energy efficiency, decreasing primary energy demand by 30% by 2030 (compared to the baseline), through action across all	-Loi du 2 aout 2004 relative à la maîtrise de l'énergie -La loi du 4 juillet 2007 sur la qualité de l'air -Décret de juillet 2005 sur l'EIE	-Agence nationale de maîtrise de l'énergie (ANME) - Agence nationale de la protection de l'environnement (ANPE)	Systèmes de management environnemental des entreprises: ISO 14001, RSE, etc. -L'audit énergétique -Certification énergétique des appareils	-Certaines nouvelles normes n'ont pas été promulguées -Ces plans sont en attente d'un décret d'application - Le texte relatif aux EIE est lacunaire, il

²⁵² <http://www.jva.gov.jo/sites/en-us/Documents/Jordan%20Valley%20Development%20Law.pdf>

²⁵⁷ <http://www.mwi.gov.jo/sites/en-us/SitePages/Water%20Policies/Irrigation%20Water%20Policy.aspx>

<p>sectors (industrial, building, transport and agricultural).</p>	<ul style="list-style-type: none"> - La loi sur la production de l'électricité à partir des énergies renouvelables datant du 11 mai 2015 -Décret n° 2009-2617 du 14 septembre 2009, portant réglementation de la Construction des bâtiments civils.(éco-construction) - Les lois de finance 2014 	<ul style="list-style-type: none"> -Société Tunisienne d'Electricité et de Gaz -Fonds pour la transition énergétique -Ministère des finances 	<ul style="list-style-type: none"> -Réseau nationale de surveillance de la qualité de l'air -Plans de déplacement urbain -Plans de conservation de la qualité de l'air -EIE et cahiers des charges - Plan national de l'énergie électrique produite à partir d'EnR -Des mesures visant l'économie de la consommation d'énergie des projets de construction et d'extension des bâtiments à usage de bureaux et assimilés, ou des bâtiments à usage résidentiel <p>Eco fiscalité au service de la transition énergétique.</p>	<p>est question de le modifier</p> <ul style="list-style-type: none"> - Intégrer l'étude stratégique d'impact - Une meilleure gouvernance entre les structures intervenants - Une coordination entre l secteur des transports et le code de l'urbanisme et le secteur énergétique <p>-Primes spécifiques en faveur de la maîtrise de l'énergie ne sont pas assez incitatifs:</p> <p>-Les décrets d'application de la loi de 2015 sont encore en projet. Ils fixent les conditions et modalités de réalisation et d'approbation des projets de production d'électricité à partir des énergies renouvelables à des fins d'autoconsommation</p> <p>-Les procédures administratives sont complexes</p> <ul style="list-style-type: none"> - Il faudrait simplifier les procédures administratives afin d'encourager les privés <p>-L'éco-construction se caractérise par l'absence d'un cadre législatif</p> <p>- Adopter une loi relative à la maîtrise de l'énergie dans le secteur des bâtiments ou intégrer la question dans le projet du code de l'environnement</p> <p>-Disparité entre les arrêtés d'application visant l'économie de la consommation d'énergie des bâtiments à usage de bureaux et assimilés</p> <p>-Absence de coordination avec les mesures prévues par le CATU.</p> <p>-Les lois de finances peu (quantitatif) de nouvelles mesures financières et fiscales en relation avec les changements climatiques</p>
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<p>3. To improve the agricultural sector's contributions to mitigation and to build agricultural capacity through innovative systems for arable crops, adapting cereal crops to climate change and other measures.</p>	<ul style="list-style-type: none"> - La loi du 5 avril 1999 et ses textes d'application sur l'agriculture biologique -Code d'incitation à l'investissement - Le décret n° 2009-362 du 9 février 2009, modifiant le décret n° 2005-2234 du 22 août 2005 - Le régime juridique des pesticides à usage agricole La loi du 3 août de 1992 sur la protection des végétaux - La loi d'orientation du 27 juillet 2004 sur les activités agricoles. Des décrets datés de 2006 ont fixé les cartes de production agricole dans 10 gouvernorats. - La loi du 11 Novembre 1983 relative à la protection des terres agricoles - La loi n°86-106 du 31 décembre 1986, portant loi de finances pour l'année 1987, a créé dans son article 52 « Le fonds de mutualité pour l'indemnisation des dommages agricoles dus aux calamités naturelles » Le code forestier d'avril 1988 	<p>Ministère de l'agriculture, des ressources hydraulique et de la pêche</p> <ul style="list-style-type: none"> -une nouvelle direction générale de l'agriculture biologique -Prime sur la valeur des équipements, instruments et moyens nécessaires à la production biologique -Suspension des droits de douane et de la TVA sur certains intrants destinés à l'agriculture biologique <p>La maîtrise de l'énergie dans l'agriculture primes de 30% du coût des équipements de production</p> <p>les taux et les montants des primes relatives aux actions concernées par le régime pour la maîtrise de l'énergie</p> <p>Ministère de l'agriculture</p> <ul style="list-style-type: none"> - La direction générale des forêts au sein du Ministère de 'agriculture 	<ul style="list-style-type: none"> -Stratégie d'adaptation de l'agriculture et des écosystèmes (2007) -Stratégie de diversification des cultures, rotations, développement des surfaces de compensations écologiques favorisant la protection des sols Audit énergétique -Homologation pour la vente des pesticides -Les normes ou la limite maximale en résidu de pesticides Classe les terres agricoles « selon les cartes établies en fonction des spécificités productives, des données naturelles et climatiques... » Classe les forêts en zone d'interdiction de changement de vocation. -EIE -Interdiction de déclassement pour protéger l'affectation des sols -Plan national forestier -Les plans d'aménagement forestier qui permettent le renouvellement et la reconstruction des ressources forestières. Des mesures relatives à la protection de la flore et la faune sauvage et des zones humides -Régimes de parcs nationaux et de réserves naturelles. -Le reboisement 	<ul style="list-style-type: none"> -Certaines filières notamment l'aquaculture ou l'élevage d'escargot ne disposent pas de cahiers de charges -Il n'existe pas d'incitations spécifiques par filière ou par produit prenant en compte la stratégie, les perspectives,... -Peu d'actions d'adaptation mises en œuvre -Aucun projet MDP développé -Les incitations sous forme de subventions restent insuffisantes en prenant en compte les capacités financières des agriculteurs ainsi que le coût moyen de la mise en place de projet de pompage à partir d'ER. -Le mécanisme de financement n'est pas très bien adapté. -Peu de ressources spécifiques à l'adaptation - intégrer l'investissement vert -supprimer les subventions pour les activités polluants - Développer le cadre juridique relatif à la maîtrise de l'énergie dans l'agriculture - Revoir les primes et les subventions en la matière -Normes anciennes depuis 1983 - Nécessité de revoir la loi de 1983 et ses mesures de protection pour mieux les mettre au service des NDC <p>Cette loi d'orientation n'a qu'une valeur indicative et son application par les agriculteurs n'est pas garantie</p> <ul style="list-style-type: none"> -Les normes ne sont pas en harmonie avec les normes européennes -Le code forestier doit intégrer expressément les exigences liées aux CC Ce qui renforcera l'intérêt de la révision et donnera un fondement au renforcement des mesures d'adaptation. I- Il faudrait lier la protection du patrimoine forestier et son développement directement à la lutte contre la déforestation
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				<p>et aux changements climatiques</p> <ul style="list-style-type: none"> -Il faudrait conditionner le déclassement par l'interdiction du changement de vocation forestière du terrain - Nécessité d'une stratégie de lutte contre le recul de la terre -L'insuffisance des subventions et encouragements à l'investissement dans les activités forestières n'incitent pas les propriétaires du secteur privé pour reboiser durablement leurs terrains vides à vocation forestière. -Faible valorisation du potentiel de séquestration dans les mécanismes d'atténuations -Manque crucial d'expertise locale et de compétence au sein des établissements sur les enjeux et opportunités de l'atténuation -Aucun projet MDP développé dans le portefeuille forêt
<p>4. To implement water resources adaptation projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres, especially Greater Tunis, Cap-bon, Sahel and Sfax. To optimize management of water resources by the tourist sector and installation of mini seawater desalination plants using renewable energies.</p>	<p>-Code des eaux de 1975</p>	<p>Ministère de l'Agriculture.</p>	<ul style="list-style-type: none"> -La tarification de l'eau (agricole et potable) tarifs de l'eau spécifiques aux hôteliers Bonne politique tarifaire incitative : Incitations à l'économie de l'eau, à l'utilisation des eaux non conventionnelles Deux stratégies décennales de mobilisation des ressources hydriques stratégies visaient la garantie de l'approvisionnement en eau potable et en eau d'irrigation dans les zones irriguées ainsi que le développement des régions -Un programme national d'économie d'eau dans le domaine de l'irrigation 	<ul style="list-style-type: none"> -Absence de données régionalisées -Manque de suivi qualitatif de l'eau - Les stratégies n'intègrent pas explicitement les exigences liées aux NDC - Il est impératif de modifier le code des eaux dans le sens de l'intégration des priorités des NDC

Illustrative Examples of Regulatory & Institutional Enablers of NDC Implementation for Morocco²⁶⁰

Loi	Titre	Action
13 – 09	Loi relative aux énergies renouvelables, telle qu'elle a été modifiée et complétée par la loi n°58-15	Publier l'arrêté définissant les enveloppes et les trajectoires, relatif à l'ouverture de la moyenne tension et le décret fixant les conditions et les modalités d'accès au réseau électrique de basse tension
47 – 09	Loi relative à l'efficacité énergétique	Adoption des textes d'application de cette loi, sachant que le décret approuvant le règlement général de construction fixant les performances énergétiques des constructions (réglementation en matière d'EE dans le Bâtiment) a été publié en novembre 2014 et il est entré en vigueur en novembre 2015

Priority NDC Commitment / Sector	Relevant Regulations (with links)	Implementing Institutions / Mandates (with links)	Guiding Policies / Standards (with links)	Notes on barriers, effectiveness, coherence / integration mechanisms, monitoring/reporting /verification, measures recourse
1. The legal and institutional framework that supports Morocco's commitment to reach over 52% of installed electricity production capacity from renewable sources by 2030.	<p>-Loi Cadre n° 99-12 portant chartre nationale de l'environnement et du Développement durable</p> <p>-Loi n°11-03 relative à la protection et à la mise en valeur de l'environnement</p> <p>- Loi n° 58-15 du 12 Janvier 2016 modifie et complète la loi n° 13-09 relative aux énergies renouvelables</p> <p>-Décret n° 2-10-578 du 7 jourmada I 1432</p>	<p>Ministère de l'énergie et des Mines , de l'eau et de l'environnement(MEMEE) (1)</p> <p>l'Agence nationale pour le développement des énergies renouvelables et de l'efficacité énergétique (Aderee)(2)</p> <p>- Moroccan Agency for Solar Energy (MASEN)(3)</p> <p>-Société d'Investissements Energétiques(SIE)(4)</p> <p>-Institut de Recherche en Energie Solaire et</p>	<p>- La stratégie Nationale du Développement Durable a(www.environnement.gov.ma)</p> <p>-La nouvelle Stratégie Énergétique Nationale</p> <ul style="list-style-type: none"> - Plan National d'action prioritaire 2008-2012 - Programme National d'Efficacité énergétique - Projet Marocain 	<p>- Problème de mise en œuvre du cadre juridique</p> <p>-Le Maroc est classé à la 100^e place du classement selon Energy Trilemma Index 2015 et ce aux niveaux suivants :</p> <p>--sécurité énergétique (efficacité de l'approvisionnement et fiabilité des infrastructures</p>

²⁶⁰ Sources: <http://www.mem.gov.ma>; <http://www.aderee.ma>; <http://www.masen.org.ma>; <http://www.siem.ma>; <http://www.iresen.org>; Report 2015 <http://www.worldenergy.org>; <http://www.clusteremc.org>; Report of the Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement, Département de l'Energie et des Mines, Direction de l'Observation et de la Programmation : Analyse des Indicateurs Energétiques, Avril 2013, <http://www.mem.gov.ma>; Report of the Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement, Département de l'Energie et des Mines; <http://www.eauxetforets.gov.ma>

	<p>(11 avril 2011) pris pour l'application de la loi n° 13-09 relative aux énergies renouvelables.</p> <p>-Loi n° 16-09 relative à l'Agence nationale pour le développement des énergies renouvelables et de l'efficacité énergétique promulguée par le dahir n° 1-10-17 du 26 safar 1431 (11 février 2010). (BO n°5822 du 18 Mars 2010)</p> <p>-Loi 47-09 sur l'efficacité énergétique</p> <p>- Loi n° 57-09 créant l'agence marocaine de l'énergie solaire et régissant le développement des projets solaires</p> <p>-Loi portant abrogation du Dahir du 13 Décembre 1954 relatif au prix de l'électricité</p> <p>-Arrêté n° 528-09 relatif à la tarification "20%, - 20%"</p> <p>-Loi n°48-15 relative à la régulation du secteur de l'électricité et à la création de l'autorité nationale de régulation de l'électricité(B.O n° 6480)</p> <p>Les lois 33-10 et 40-09 relatives à la sûreté et à la sécurité nucléaire et au regroupement de l'Office National de l'Electricité et de l'Office National de l'Eau Potable(ONEE)</p> <p>- Loi n°86-12 sur les Partenariats Publics Privés</p>	<p>Energies Nouvelles (IRSEN)(5)</p> <p>-Office Nationale de l'électricité et de l'Eau Potable(ONEE)</p> <p>-Autorité Nationale de Régulation de l'électricité</p>	<p>Intégré d'énergie Solaire (Ouarzazate)</p> <p>- Projet Marocain Intégré d'Energie Eolienne (Tanger)</p> <p>- Programme de Développement du marché des chauffe-eau solaires (Promasol)</p> <p>Schéma National de Régulation du secteur électrique</p>	<p>--équité en matière d'énergie (accessibilité de l'énergie pour la population)</p> <p>-- la durabilité environnementale(approvisionnement en énergies renouvelables)(6)</p> <p>- Production que de 5 % de l'énergie que le Maroc consomme</p> <p>- Niveaux élevés de pollution et augmentation des émissions et des niveaux d'intensité énergétiques</p> <p>-Les institutions en charge de la gestion de la stratégie énergétique comme L'ONEE font face à d'énormes difficultés financières causées par les lacunes suivantes:</p> <p>- la structure des prix ne reflète pas les coûts d'exploitation du secteur,</p> <p>-la faible collecte des paiements,</p> <p>-la difficulté de couvrir les dettes pour nombreux distributeurs privés ,</p> <p>-l'usage excessif du fuel couteux,</p> <p>- le retard des investissements dédiés aux grands projets structurants et rentables</p>
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<p>2. The legal and institutional framework that supports Morocco's commitment to reduce energy consumption by 15% by 2030. (To be achieved by reducing energy consumption in buildings, industry and transport. Industry will account for 48% of the reduction in consumption).</p>	<p>-Loi n°11-03 relative à la protection et à la mise en valeur de l'environnement</p> <p>-Loi Cadre n° 99-12 portant charte nationale de l'environnement et du Développement durable</p> <p>- Loi n° 58-15 du 12 Janvier 2016 modifie et complète la loi n° 13-09 relative aux énergies renouvelables</p> <p>-Loi 47-09 sur l'efficacité énergétique</p> <p>-Loi de finances 40-08 instituant le fonds du Développement énergétique</p> <p>-Décret N° 2-13-874 du 20 Hija (15 Octobre 2014) approuvant le règlement général de construction fixant les règles de performance énergétique des constructions et instituant le comité national de l'efficacité énergétique dans le bâtiment</p>	<p>- Ministère de l'énergie et des Mines , de l'eau et de l'environnement(MEMEE)</p> <p>-Agence nationale pour le développement des énergies renouvelables et de l'efficacité énergétique (Aderee)</p> <p>- Société d'investissements énergétiques (SIE)</p> <p>-Cluster EMC (Efficacité énergétique des matériaux et de construction(7)</p> <p>-</p>	<p>- La stratégie Nationale du Développement Durable</p> <p>1-Parc de bâtiments :</p> <p>--Plan d'Azur de l'hôtellerie,</p> <p>--Programme d'urgence de l'éducation nationale,</p> <p>--Programme des 150000 logements par an,</p> <p>--Programme de réhabilitation des Hôpitaux</p> <p>2.- Programme d'efficacité énergétique dans l'industrie (PEEI)</p>	<p>-la pratique ne suit pas la volonté de réduire la consommation d'énergie fossile</p> <p>- Difficulté de mise en œuvre de la réglementation thermique au niveau de la formation des acteurs de mise en œuvre (Concepteurs, opérateurs, entreprises, artisans);au niveau de la communication et la sensibilisation envers les décideurs et le grand publics ;au niveau de l'appui au développement de l'offre de matériaux et de services liés à la mise en œuvre des mesures techniques de la réglementation, et au niveau du développement de mécanismes de financement spécifiques (lignes de crédits dédiées, défiscalisation)</p> <p>-Forte dépendance de l'étranger en ce qui concerne l'importation de 95% de ses besoins</p> <p>- Trend haussier et accentuation de la volatilité des cours mondiaux des combustibles</p> <p>-Impératifs de protection de l'environnement</p> <p>-Souci de préservation du pouvoir d'achat des citoyens et du renforcement de la compétitivité des opérateurs économiques nationaux</p> <p>- Détérioration de l'efficacité énergétique du secteur des transports (8)</p> <p>-Augmentation de la consommation d'énergie dans le</p>
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				<p>secteur des transports de 6,28% par an contrairement à la croissance du PIB qui est de 5% par an(9)</p> <p>- Insuffisance des formations offertes aux étudiants architectes</p>
<p>3. The legal and institutional framework that supports Morocco's commitment to afforest 50,000 ha of land.</p>	<p>-Dahir du 10 octobre 1917 sur la conservation et l'exploitation des forêts (B.O n° 262)</p> <p>- Loi n° 58-15 du 12 Janvier 2016 modifie et complète la loi n° 13-09 relative aux énergies renouvelables</p> <p>-Loi 47-09 sur l'efficacité énergétique</p>	<p>-Haut-Commissariat aux Eaux et Forêts et à la lutte contre la désertification(10)</p> <p>-Conseil National des forêts</p>	<p>- La stratégie Nationale du Développement Durable</p> <p>- plan National de reboisement (PNR)</p> <p>- Plan décennal 2015-2024 : reconstitution du couvert végétal à travers le reboisement de près de 80.000ha avec un rythme de 8000 ha /par an, soit une augmentation de 37% par rapport au décennal 2005-2014 :</p> <p>-Programme de sauvegarde et de reconstitution de l'écosystème cédraie du Moyen Atlas</p> <p>-Programme National de réduction de la consommation de bois de feu dans les régions prioritaires</p> <p>-Programme de lutte contre les délits forestiers</p>	<p>-Sous équipement des structures décentralisées du Haut-Commissariat aux Eaux et Forêts et à la lutte contre la désertification au niveau des moyens de télécommunications, des pistes forestières et du parc automobile</p>

ANNEX 2: OVERVIEW OF THE PARIS AGREEMENT

2.1 Introduction

In 2015, through *Transforming our World: The 2030 Agenda for Sustainable Development*, the UN and its member States agreed on 17 Sustainable Development Goals (SDGs) for the world, identifying time-bound targets and implementation methods.²⁶¹ Legal reviews reveal that these SDGs can be found in the object and purpose of many important international treaties.²⁶² Achieving SDG 13 to take urgent action to combat climate change and its impacts will be implemented in part through the Paris Agreement; indeed, SDG 13 itself acknowledges that the UNFCCC is the primary international, intergovernmental forum for negotiating the global response to climate change. Other SDGs, for instance on energy, water, hunger, poverty, biodiversity and innovation, are also highly relevant to the treaty's objectives.

The Paris Agreement seeks to establish a universally acceptable framework to limit climate change to well below 2°C, pursuing efforts toward a 1.5°C limit, to support adaptation and resilience, and to provide and mobilise climate finance, equitably promoting sustainable development and poverty eradication. The international regime developed in an interactional manner over decades,²⁶³ as countries sought to address climate challenges domestically while also struggling to find an appropriate international cooperative framework.

In essence, the Paris Agreement presents a core triangle of obligations:

- (i) countries must take nationally determined, quantifiable and progressive action for climate mitigation and adaptation;
- (ii) developed countries must support developing country actions through changes to international financial flows and related technology transfer, capacity building, education and other cooperative measures; and
- (iii) implementation and enforcement are facilitated by transparency and reporting, peer review, periodic stocktaking and compliance mechanisms.

While all Parties, including those with the least historical contributions to global emissions, begin to play a role in emissions reduction, they also benefit from new investment and collaboration for low GHG pathways for sustainable development and poverty eradication. As an important instrument in the climate regime, the Paris Agreement holds all the hallmarks of a sustainable development accord.²⁶⁴

The new Paris Agreement is predicated upon an expectation that, if NDCs can be supported by peer review and public awareness, new scientific data on risks, actual impacts, and greater political attention will lead to ever-higher ambition from all levels of government,

²⁶¹ UNGA Res 70/1.

²⁶² See MC Cordonier Segger and E Mrema (eds), 'The Contribution of International Law, Policy and Governance to the Sustainable Development Goals' (Issue Briefs, CISDL/UNEP), No. 13 Climate Action (K. Lofts, S. Shamin, ST Zaman, R Kibugi, 2016).

²⁶³ For more see S Toope and J Brunee, *Legitimacy and Legality in International Law: An Interactional Account* (CUP 2010).

²⁶⁴ MC Cordonier Segger and A Khalfan *Sustainable Development Law: Principles, Practices, and Prospects* (OUP 2004). See also C Voigt, *Sustainable Development as a Principle of International Law: Resolving Conflicts Between Climate Measures and WTO Law* (BRILL 2009).

along with non-State actors in the private sector and civil society. Some hope that countries, perhaps in clubs with higher ambition, can move towards setting and achieving absolute emissions reduction targets, diversified enhanced mitigation actions, or arrangements among donors and beneficiaries to address key sectors. The peer review mechanism could seek to encourage Parties to attain net zero emissions levels over the long-term, through a quantifiable standard. The 'high achieving clubs' would set higher ambition, whether or not remaining recalcitrant countries also accept such actions as obligatory.

2.2 Objectives of the Paris Agreement

Under Article 2, the Paris Agreement aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, by holding the increase in the global average temperature to "well below 2°C above pre-industrial levels" and pursuing efforts to limit the temperature increase to 1.5°C; by increasing the ability to adapt to the adverse impacts of climate change as well as foster climate resilience and low GHG emissions development; and by making finance flows consistent with a pathway towards low GHG emissions and climate resilient development.²⁶⁵ The new treaty seeks to continue with ambitious implementation of the UNFCCC, which holds as its ultimate objective the "stabilization of greenhouse gas concentrations in the

atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system [...] within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to *enable economic development to proceed in a sustainable manner*" (emphasis added).²⁶⁶

Article 2 of the Paris Agreement further specifies that the agreement will be implemented to "reflect equity and the principle of CBDRRC, in the light of different national circumstances."²⁶⁷ The legal obligations of developing countries under the Paris Agreement are thus variable in order to equitably reflect their historical, economic, and social circumstances in comparison with that of other states. Article 3 of the Paris Agreement underscores that all Parties will undertake and communicate ambitious efforts (as defined in Articles 4, 7, 9, 10, 11 and 13) to achieve the aim of the agreement through NDCs to the global response to climate change. In doing so, it recognises, the efforts of all Parties will progress over time, and that there is a need to support developing country Parties for effective implementation.

The Paris Agreement aims to achieve these climate mitigation, adaptation and financial objectives through a series of cooperative frameworks and mechanisms, each of which establishes different legal rights and obligations for Parties, and explicitly makes provision for the needs of developing country Parties,

²⁶⁵ Paris Agreement (adopted 12 December 2015, opened for signature 22 April 2016, entered into force 4 November 2016) UN Doc FCCC/CP/2015/L.9/Rev.1.

²⁶⁶ While this Article establishes an unequivocal link between the Paris Agreement and the UNFCCC, as do the common implementation mechanisms discussed below, the Agreement remains silent on the actual nature of the relationship between the two documents. The Paris Agreement could be said to constitute a *de facto* Protocol to the UNFCCC but may also be characterised as a

subsequent agreement. The latter option would give more room for an interpretation of the terms of the Paris Agreement independent of the meaning contained in the UNFCCC. See in that regard, A Savaresi, 'The Paris Agreement: A Rejoinder' (*EJIL: Talk!* 16 February 2016) <<http://www.ejiltalk.org/the-paris-agreement-a-rejoinder/>> accessed 12 June 2016.

²⁶⁷ Note the shift from differentiation as adopted by the UNFCCC.

especially the most vulnerable. These are intended to (1) achieve NDCs on mitigation and adaptation, through (2) mobilisation of resources, (3) transparency, global stocktaking and review, (4) a sustainable development mechanism, internationally transferred mitigation outcomes (a means to balance, without double counting, any carbon-based trade between NDCs that might take place) and non-market approaches, (5) technology transfer and (6) further implementation measures, such as capacity-building, education, and a compliance mechanism.

2.3 Nationally Determined Contributions to Climate Mitigation and Adaptation

One of the central aspects of the Paris Agreement is its ‘bottom-up’ approach. Paragraph 2(b) of decision 1/CP.19 of the Conference of the Parties to the Convention invited all Parties to communicate to the UNFCCC Secretariat their “intended Nationally Determined Contributions (iNDCs) for GHG emissions reductions. By CoP21, 185 countries had submitted their iNDCs. Under Article 3 of the Paris Agreement, Parties commit that they “shall prepare, communicate and maintain” successive NDCs (Article 3) and pursue domestic mitigation measures to achieve their commitments. Already, countries have been reviewing and updating their intended NDCs before they ratify the Paris Agreement and submit them as NDCs. Rather than setting out specific mitigation or adaptation targets for each country, the Paris Agreement commits Parties to nationally determine and

transparently communicate their own objectives, to inform the international community of the progress in implementing and achieving them, and to participate in periodic global stocktaking to inform progressively higher ambition. Paragraph 13 of the Paris Agreement adoption decision (1/CP.21) recalls this invitation for Parties who have not done so already.

i. GHG Emission Mitigation, Low-Carbon GHG Emission Development Strategies and GHG Sinks and Reservoirs

In Article 4 of the Paris Agreement, the Parties aim to reach global peaking of GHG emissions as soon as possible, recognising that this will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with the best available science, so as to balance emissions by sources and removals by sinks in the second half of this century (Article 4.1). The notion of balancing emissions and removals can be understood as an objective of “net zero” emissions, whereby any residual anthropogenic GHG emissions would be annulled by activities removing GHG from the atmosphere. Such a sequestration of GHG could occur through expansion of the activities of natural carbon sinks and reservoirs, such as forests or oceans, or through the deployment of carbon capture technologies.²⁶⁸

The NDCs will be communicated every five years (i.e., 2020, 2025, 2030, etc.). A Party may at any time adjust its existing NDC to enhance its level of ambition (Article 4.3, Article 4.11). These NDCs, once submitted by the

²⁶⁸ The utilization of both carbon sinks (including afforestation) and carbon dioxide capture and storage (CCS) as well as bioenergy with carbon dioxide capture and storage (BECCS) feature in several of the mitigation scenarios developed by the UNFCCC. This applies not only to overshoot scenarios (where the declared targets are exceeded for certain periods) but also to compensate

for industries in which mitigation is more costly. However, there are also concerns associated with the deployment of CCS and BECCS. See IPCC 2014 Report, SPM 3.4, 23 as well as Full IPCC Report, Box 3.3 “Carbon Dioxide Removal and Solar Radiation Management Geoenvironmental Technologies - Possible Roles, Options, Risks and Status” 89.

government of a country, are likely to be recorded in a public registry maintained by the UNFCCC Secretariat. The information that must be included in the communication of NDCs, so as to facilitate clarity, transparency and understanding, is explained in paragraph 27 of the Adoption Decision (see also Decision 1/CP.20, Paragraph 14). Furthermore, Parties shall account for their NDCs and, in accounting for GHG emissions and removals corresponding to the NDCs, Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and avoid double-counting in accordance with guidance from Parties in the Conference of the Parties serving as the Meeting of the Parties to the Paris Agreement (Article 4.13).

Article 4 of the Paris Agreement recognises that developed countries should take the lead by undertaking economy-wide absolute emission reduction targets, while developing countries should continue enhancing mitigation efforts, moving over time towards economy-wide targets (Article 4.4, see also Preamble Para 16). Support shall also be provided to developing country Parties for the implementation of mitigation efforts, recognising that enhanced support for developing country Parties will allow for higher ambition in their actions (Article 4.5, see also Articles 9, 10 and 11). The least developed countries (LDCs) and small island developing States (SIDS) may prepare strategies that reflect their special circumstances (Article 4.6). Parties shall take into consideration in the implementation of this Agreement

the concerns of Parties with economies most affected by the impacts of response measures, particularly developing country Parties (Article 4.15). Further, over and above their NDCs, all Parties should strive to formulate and communicate Long-term Low GHG Emission Development Strategies (LEDS), taking into account CDDRRC, in light of different national circumstances (Article 4.19).

In the Paris Agreement, Parties also agree that they should take action to conserve and enhance GHG sinks and reservoirs as described in UNFCCC Article 4.1(d), including forests.²⁶⁹ They are encouraged to take action to implement and support the existing framework as set out in related guidance and decisions already agreed under the UNFCCC, in order to reduce emissions from deforestation and forest degradation (REDD+ framework), including through results-based payments.²⁷⁰ The role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries, but also alternative policy approaches such as joint mitigation and adaptation approaches for integral and sustainable management of forests, is emphasised, while the importance of incentivising non-carbon co-benefits is also reaffirmed (Article 5.2). These simple provisions highlight and integrate many existing decisions and guidance for collaboration, including those established or strengthened in recent years.

²⁶⁹ See B Locatelli and others, 'Forests and Climate Change in Latin America: Linking Adaptation and Mitigation' (2011) 2 Forests 431.

²⁷⁰ IJ Visseren-Hamakers and others, 'Trade-offs, co-benefits and safeguards: current debates on the breadth of REDD+' Current Opinion in Environmental Sustainability 4 (2012) 646; P Kanowski, C McDermott and B Cashore, 'Implementing REDD—Lessons from Analysis of Forest

Governance Governing and Implementing REDD+' Environmental Science and Policy 14 (2011) 111; A La Viña and A de Leon, 'Two Global Challenges, One Solution: International Cooperation to Combat Climate Change and Tropical Deforestation' (CGD Climate and Forest Paper Series #14, Working Paper 388, December 2014).

ii. Adaptation Goal and Communications

By virtue of Article 7, a global goal on adaptation is established, to enhance adaptive capacity, strengthen resilience and reduce vulnerability to climate change, with a view to contributing to sustainable development and ensuring an adequate adaptation response (Article 7.1). Each Party should submit and periodically update an Adaptation Communication, which may include a national adaptation plan, priorities, implementation and support needs, plans and actions, without creating additional burdens for developing country Parties (Article 7.10, Article 7.11). The Adaptation Communications shall be recorded in a public registry maintained by the UNFCCC Secretariat (Article 7.12).

Among sustainable development aspects of Article 7, the treaty provides that adaptation is recognised as a global challenge faced by all with multiple dimensions, taking into account the urgent and immediate needs of those developing country Parties that are particularly vulnerable to the adverse effects of climate change (Article 7.1). The adaptation efforts of developing country Parties shall be recognised, in accordance with the modalities to be adopted by the first CoP meeting of the Paris Agreement. Parties (Article 7.3), and Adaptation Committee and the Least Developed Countries Expert Group (LEG) should be involved in this process (Adoption Decision, Paragraph 42). The Green Climate Fund is to expedite support for the least developed countries and other developing country Parties for the formulation of National Adaptation Plans (Adoption Decision, paragraph 46). At CoP22, it was suggested that the Green Climate Fund could set aside

a certain percentage of its funds to address slow-onset events, although agreement was not reached.

Parties should strengthen their cooperation on enhancing action on adaptation, taking into account the Cancun Adaptation Framework (Article 7.7), and the global stocktake shall recognise and enhance these efforts, reviewing the adequacy and effectiveness of adaptation and support for it, and overall progress (Article 7.14, also Article 14). Continuous and enhanced international support shall be provided to developing country Parties for the implementation of commitments to enhance action on adaptation, to engage in adaptation planning, and to prepare, submit and periodically update their Adaptation Communications (Article 7.13, also Articles 7.7, 7.9, 7.10 and 7.11).

iii Efforts to Address Loss and Damage

The Paris Agreement recognises the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, including extreme weather events as well as slow onset events, and it specifically highlights the importance of sustainable development in reducing the risk of loss and damage (Article 8.1). The Paris Agreement also addresses the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts, noting that the Mechanism shall be subject to the authority and the guidance of the CoP serving as the Meeting of the Parties to the Paris Agreement (the new CMA), and notes that Parties should enhance understanding, action and support, on a cooperative and facilitative basis, with respect to loss and damage associated with the adverse effects of climate

change (Article 8.3, also Article 8.2). Certain key priorities for cooperation and facilitation are identified in the Paris Agreement, such as early warning systems, emergency preparedness, slow onset events, events that may involve irreversible and permanent loss and damage, comprehensive risk assessment and management, risk insurance facilities, climate risk pooling and other insurance solutions, non-economic losses, as well as resilience of communities, livelihoods and ecosystems (Article 8.4). The treaty commits to ensure that the Warsaw International Mechanism (WIM) collaborates with existing bodies and expert groups, as well as relevant actors outside the Agreement (Article 8.5). It does not go further to define, deny or designate liability or compensation. In the Adoption Decision, while a new clearinghouse for risk transfer is established to serve as a repository for information on insurance and risk transfer to facilitate Parties' efforts to develop and implement comprehensive risk management strategies (Adoption Decision, paragraph 49), it is simply stated that Article 8 of the treaty does not involve or provide a basis for any liability or compensation (Adoption Decision, paragraph 52). In essence, the treaty neither confirms nor denies whether liability exists, or compensation should be provided, a stalemate in legal terms.

2.4 Mobilisation and Directing of Climate Finance

Under Article 9 of the Paris Agreement, developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation, in continuation of their existing UNFCCC obligations (Article 9.1) and provide transparent and consistent information on this support

(Article 9.7), while other Parties are encouraged to provide financial support voluntarily (Article 9.2). At the same time, it holds, all Parties should increase their efforts in mobilising climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds, and taking into account the priorities and needs of developing country Parties, with the greater onus being on developed country Parties which shall take the lead (Article 9.3).

Prior to 2025, the COP shall set a new collective quantified goal from a floor of USD 100 billion per year, taking into account the needs and priorities of developing countries (decision 1/CP.21, paragraph 54). Developed country Parties are strongly urged to scale up their level of financial support, with a concrete roadmap to achieve the total financial support by 2020 for mitigation and adaptation, while significantly increasing adaptation finance from current levels, and to provide appropriate technology and capacity-building support (decision 1/CP.21, paragraph 115). Developed country Parties shall biennially communicate indicative quantitative and qualitative information related to scaling up of the provision and as regards mobilising financial resources, including as to the balance between adaptation and mitigation (as per Articles 9.1, 9.3 and 9.5), as applicable, with the financial mechanism of the UNFCCC serving as the mechanism for the Paris Agreement.

The provision of scaled-up financial resources should attempt to balance the provision of mitigation and adaptation resources and take into account country-driven strategies and the priorities and needs of developing country Parties, especially those that are particularly vulnerable to the

adverse effects of climate change and have significant capacity constraints, such as LDCs and SIDS, considering the need for public and grant-based resources for adaptation (Article 9.4).

2.5 Transparency, Global Stock-Taking and Peer Review

By virtue of Article 13, in addition to reporting on mitigation and adaptation, Parties should also regularly provide Communications on a national inventory report of GHG emissions by sources and removals by sinks, prepared using good practice methodologies accepted by the IPCC (Article 13.7(a)), and the information necessary to track progress made in implementing and achieving NDCs (Article 13.7(b)). They should also provide information regarding climate change impacts and adaptation (Article 13.8). There is some flexibility built into this requirement, with the capability of different Parties taken into account (Article 13.2 and 13.12).

Of particular interest to developing countries, Article 13 contains further transparency provisions. For developing country Parties, information may be presented on financial, technological and capacity-building support needed and received under Article 9 on climate finance, Article 10 on technology transfer and Article 11 on capacity building (Article 13.10). For developing country Parties, information may be presented on progress made on implementing capacity-building plans, policies, actions or measures to implement the Paris Agreement (Article 11.4). The LDCs and SIDS may submit the information required at their discretion (Adoption Decision, paragraph 91).

The national inventory reports on GHG emissions by sources and removals by

sinks, and the information for tracking progress, as well as the level of support by developed countries to developing countries, will be the object of a technical expert review and also of a multilateral consideration of progress (Article 13.11, Article 13.12, Article 13.13). The review process shall pay particular attention to the respective national capabilities and circumstances of developing country Parties. Support shall be provided to developing countries for the implementation of transparency framework (Article 13.14), and for building the capacity of developing country Parties to participate in the process, on a continuous basis (Article 13.15). In addition, the Capacity Building Initiative for Transparency (CBIT) trust fund will help countries in their efforts to build institutional and technical capacity for meeting enhanced transparency of action and support needs (decision 1/CP.21, para. 84). The 'enhanced transparency framework' shall build on the transparency arrangements under the UNFCCC (including reporting, verification and monitoring measures) and be implemented with common modalities, guidelines and procedures in a manner that is facilitative, non-intrusive, non-punitive, respectful of national sovereignty, and avoids placing undue burdens on Parties (Article 13.3). It shall supersede existing guidance (decision 1/CP.21, paragraph 88).

As a further ambition/transparency measure, the Paris Agreement stipulates that its Meetings of the Parties shall periodically take stock of treaty implementation, to assess collective progress towards achieving the treaty purpose and long-term goals (referred to as the "global stocktake"). Stocktaking will be comprehensive and facilitative, considering mitigation, adaptation and the means of

implementation and support, in the light of equity and the best available science (Article 14.1) The first global stocktake is planned for 2023 and every five years thereafter (Article 14.2), and the outcome of the global stocktake shall inform Parties in updating and enhancing, in a nationally determined manner, their actions and support, as well as in enhancing international cooperation for climate action (Article 14.3).

2.6 Sustainable Development Market Mechanism International Transfers of Mitigation Outcomes and Non-Market Approaches

Under Article 6, Parties may engage in “international transfers of mitigation outcomes” between NDCs, through voluntary cooperation, to allow for “higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity” (Article 6.1). When using internationally transferred mitigation outcomes, Parties shall promote sustainable development and ensure environmental integrity and transparency, applying robust accounting and governance to avoid double-counting, consistent with guidance to be adopted by the CoP meeting of the Parties to the Paris Agreement (Article 6.2).²⁷¹

Further, a ‘sustainable development mechanism’ is established to promote mitigation of GHG emissions while fostering sustainable development; to incentivise and facilitate GHG mitigation by public and private entities authorized by a Party; to contribute to the reduction of emission levels in the host Party, which will benefit from

mitigation activities resulting in emission reductions that can also be used by another Party to fulfil its NDC; and to deliver an overall mitigation in global emissions (Article 6.4). It is established under the authority of the CoP meeting of the Paris Agreement Parties, for use by the Parties on a voluntary basis, and is to be supervised by a body designated by the CoP meeting of the Parties (Article 6.4). Rules, modalities and procedures for its operation should be forthcoming (Article 6.7). The new mechanism might draw upon certain experience accumulated through the Clean Development Mechanism (CDM) under the Kyoto Protocol. However, two key questions are the relationship between the CDM and SDM and how this mechanism will work in a world of NDCs, where developing countries (as potential hosts) also have agreed baselines and/or reference levels.

Provisions of interest to vulnerable developing countries include a commitment that a share of proceeds from the mechanism shall be dedicated to cover administrative expenses and to assist developing country Parties particularly vulnerable to climate change to meet adaptation costs (Article 6.7). There is also recognition of the importance of non-market approaches, and the definition of a framework to promote them, including public and private sector participation and coordination across instruments and relevant institutional arrangements, as well as both mitigation and adaptation (Article 6.8 and 6.9). Detailed procedures and features for implementation are under currently negotiations.

²⁷¹ See K Khoday ‘Mobilizing Market Forces to Combat Global Environmental Change: Lessons from UN-Private Sector Partnerships in China’ (2007) 16 RECIEL 173; S Bernstein and others, ‘A Tale of Two Copenhagens: Carbon Markets and Climate Governance’ (2010) 39

Millenn J Int Stud 161; C Voigt ‘WTO Law and International Emissions Trading: Is there Potential for Conflict?’ (2008) 2 CCLR 54.

2.7 Technology Mechanism

The Technology Mechanism established under the UNFCCC shall also serve the Paris Agreement (Article 10.3). Parties recognise the importance of technology for the implementation of mitigation and adaptation actions under the Paris Agreement, and commit to strengthening cooperative action on technology development and transfer (Article 10.2). They also establish a framework to guide the operation of the Technology Mechanism (Article 10.4). Of interest to vulnerable developing countries, Parties agree to focus on collaborative approaches to research and development, and on facilitating access to technology, in particular for early stages of the technology cycle, for developing country Parties (Article 10.5). Support, including financial support, shall be provided to developing country Parties, including for strengthening cooperative action on technology development and transfer at different stages of the technology cycle.

2.8 Further Measures for Implementation of the Agreement

i. Cooperation for Capacity-Building

Capacity-building under the Paris Agreement, according to Article 11, should enhance the capacity and ability of developing country Parties to take effective climate action, particularly “countries with the least capacity, such as the least developed countries, and those that are particularly vulnerable to the adverse effects of climate change” (Article 11.1). All countries should cooperate to achieve this, and there is a specific provision that developed country Parties should enhance support for capacity-building actions in developing country Parties (Article

11.3). Capacity-building should be country-driven, responsive to national needs, and foster country ownership of Parties, including at the national, subnational and local levels, in particular for developing country Parties (Article 11.2). In essence, an effective, iterative process is called for – one that is participatory, cross-cutting and gender-responsive (Article 11.2). Capacity-building should be guided by lessons learned, including those from previous activities under the UNFCCC. There will be regular communication by all Parties that support capacity-building about their actions and measures (including the capacity-building done under regional, bilateral and multilateral approaches). Capacity-building will not just assist with technical capacity for implementing adaptation and mitigation actions, the facilitation of technology development, dissemination and deployment, and access to climate finance, but it will also support education, training and public awareness, and the transparent, timely and accurate communication of information (Article 11.1, Article 11.4, see also Article 13.15).

The Paris Agreement calls for capacity-building activities to be enhanced through appropriate institutional arrangements, to be developed by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, known as the CMA (Article 11.5). The Paris Committee on Capacity-building is also created, with the aim of addressing gaps and needs in implementing capacity-building in developing country parties and further enhancing capacity-building efforts, including with regard to coherence and coordination in capacity-building activities under the Convention (Adoption Decision, paragraph 72). This key element was

successfully operationalized during CoP22.

As mentioned above, a Capacity-building Initiative for Transparency (CBIT) is created by decision 1/CP.21 in order to build institutional and technical capacity, both pre- and post-2020. This initiative will support developing country Parties, upon request, in meeting enhanced transparency requirements as defined in Article 13 of the Agreement in a timely manner (decision 1/CP.21, paragraph 85).

ii. Education and Public Awareness

The Paris Agreement affirms that Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognising the importance of these steps with respect to enhancing actions under the Agreement (Article 12).

ii. Implementation and Compliance Mechanism

A mechanism to facilitate implementation of the agreement and promote compliance is established (Article 15.1). This mechanism is structured as an expert-based and facilitative committee, and operates in a transparent, non-adversarial, and non-punitive way, according to procedures to be defined by the first CMA. The Compliance Committee shall pay particular attention to the respective

national capabilities and circumstances of Parties.

The committee shall consist of 12 members with recognised competence in relevant scientific, technical, socio-economic or legal fields, to be elected by the CoP on the basis of equitable geographical representation, with two members each from the five regional groups of the United Nations and one member each from the SIDS and the LDCs, taking gender balance into account (decision 1/CP.21, paragraph 103).

iii. Governance and Dispute Settlement

The Paris Agreement adopts the UNFCCC rules of procedure and secretariat (Article 16 and Article 17); its governance structure, including subsidiary body for scientific and technological advice (UNFCCC Article 9) and the subsidiary body for implementation (UNFCCC Article 10), the arrangements for voting and observer participation (Article 18, Article 19), and its dispute settlement mechanism (Article 24, see also UNFCCC Article 14). The treaty opens for signature from 22 April 2016 to 21 April 2017, and thereafter for accession (Article 20.1), and shall enter into force 30 days after 55 Parties to the UNFCCC accounting for at least 55 per cent of global GHG emissions have joined (Article 21.1) (this latter milestone took place on 04 November 2016 with 169 States having ratified the Agreement as on the day of the publication of this report).

ANNEX 3 : NATIONAL LEGAL AND INSTITUTIONAL BARRIERS TO ACHIEVING THE NDC OBJECTIVES OF TUNISIA, JORDAN AND MOROCCO

Jordan

Priority NDC objectives	Key legal and institutional gaps	Recommendations to address gaps
To increase renewable energy from 2% of overall energy in 2013 to 10% in 2020	<ul style="list-style-type: none"> • A lengthy technical and administrative process before a renewable energy project developer can obtain the relevant licenses. • Prohibition on private-private transmission. <p>Limited awareness among domestic and international investors with regards to the availability of incentives.</p>	<ul style="list-style-type: none"> • Streamlining, clarification and transparency for administrative processes. • Renewable energy law should be reformed to allow a private entity to produce electricity from renewable energy and sell the output to consumers located domestically or abroad (private-private transmission). • Private sector should seek to gain a greater understanding of the system and incentives; Government may be able to assist through regional workshops and guidelines specifically for private investors.
To improve energy efficiency by 20% by 2020	<ul style="list-style-type: none"> • Limited monitoring and enforcement of energy efficiency regulations. • Lack of awareness of financial incentives. <p>Reduce the risks for investors and offset the up-front cost of energy conservation projects.</p>	<ul style="list-style-type: none"> • Improve the monitoring and enforcement of energy efficiency regulations through strengthened capacity among government regulators. • Improve communications with stakeholders to facilitate the uptake of existing financial incentives and clarify institutional roles. • Introduce energy performance certificates that provide information about the energy performance of a building. • Performing regular inspections of energy-intensive appliances, particularly air conditioning units. • Jordan should establish funding mechanisms and financial incentives to complement the existing fund set up under Article 12 of the REEL.

		The regulatory platform may benefit from careful review to ensure that its instruments can be applied more coherently.
To improve public transport and deploy infrastructure to support a renewable energy powered zero emissions fleet	<ul style="list-style-type: none"> Limited and fragmented inter-Ministerial coordination, unguided by comprehensive planning, has led to random urbanization, which limits the ability to develop a public transportation sector. Significant administrative delays characterise the municipal and national planning process. There are no laws or regulations on establishing a zero-emission public transport fleet. Insufficient engagement with PPP model, including limited public financial incentives, to modernise the transport industry. 	<ul style="list-style-type: none"> Establish an inter-Ministerial and multi-level committee on urbanisation, to improve national and local-level government urban planning. Streamline municipal and national planning processes, to reduce the amount of time private investors must wait for approval. Provide tax incentives to upgrade public vehicles to a zero-emission fleet. Reduce energy subsidies on fossil fuel-based vehicle fuels. <p>Government must increase financial and political support in public transport PPPs, to lower the risk of investment for the private sector.</p>
To improve the agricultural sector's contributions to adaptation	<ul style="list-style-type: none"> Overlaps between the Agriculture Law and Environmental Protection Law in terms of land degradation result in unclear enforcement responsibilities and recourse pathways <p>Fragmented institutions prevent the government from adequately protecting farmers from climate change. Reducing disaster risk falls under the defense portfolio, while the land-use ministries (primarily agriculture and environment) are responsible for enacting laws to protect farmers from climate change.</p>	<ul style="list-style-type: none"> Harmonise the Agriculture Law and Environmental Protection Law to clarify where responsibility for agricultural land and forest land degradation lies. Harmonise the mandates of Ministries responsible for climate change risk and farming. <p>Raise national and local awareness of the importance of the agriculture sector for climate change adaptation</p>
To adopt adaptation measures and programs for the water sector	<ul style="list-style-type: none"> Government agencies (WAJ and JVA) have insufficient budgets to invest in effective adaptation of wastewater and irrigation infrastructure. In addition, their authority overlaps with other ministries and laws are not being enforced. <p>Limited legal and regulatory framework for water management.</p>	<ul style="list-style-type: none"> Private sector should take over the operation of infrastructure and services in both wastewater and irrigation infrastructure and services. Amendments to water management laws must be made, to prevent unnecessary overuse of water. This includes amendments to the Groundwater Bylaw to provide specific quotas and

		<p>safe yield amounts for groundwater extracted from aquifers.</p> <ul style="list-style-type: none"> • Develop Regulations that address the environmental and health consequences of grey water, and restrict other activities that waste water. • Introduce financial incentives for water conservation, such as loans for installing equipment
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Tunisia

Priority NDC objectives	Key legal and institutional gaps	Recommendations to address gaps
<p>To increase use of renewables from 4% in 2015 to 30% in 2030</p>	<ul style="list-style-type: none"> • Lack of transparency in the regulation of the renewable energy sector, for example discretionary setting of tariffs for the purchase of renewable energy for local consumption and excess self-generation, as well as <i>ad hoc</i> contracting with IPPs. • The monopoly and vertical integration of STEG, leading to inefficiencies in governance and lack of competition / lack of competition with private generators. • Restrictions on IPPs and private-private transmission, as all renewable energy must be sold to STEG. • Limited investment incentives in the Renewable Energy Law 2015, particularly for small-scale renewable energy operators, who are required to pay for network connection costs, without a Feed in Tariff to equalize costs, and who face maximum capacity limits on renewable energy projects are low and not in line with international standards • No independent energy regulator <p>Inefficient energy subsidies on fossil fuel-based energy</p>	<ul style="list-style-type: none"> • Clarification and transparency for processes such as tariff setting and contracting, must be, including standardised criteria for determining the price to be paid for surplus electricity, and a standard contract. • Effective regulation of STEG to ensure it does not have conflicts of interest regarding the connection of private renewable energy, and to allow private investors to be more competitive with STEG • Reforming energy subsidies may also reduce STEG's monopoly power, through limiting the deficits that are offset by the Government. • Renewable energy law should be reformed to allow a public or private entity to produce electricity from renewable energy and sell the output to consumers located domestically or abroad (private-to-private). • Further incentives should be introduced, such as the introduction of a Feed in Tariff and defraying the costs of network connections. • Simplify land ownership arrangements. Tunisia's renewable energy law already envisages priority development zones. Jordan could be used as an example in how to implement this type

	sources, resulting in an unlevel playing field	<p>of measure, as the tender process in the REEL offers suitable locations that have already been identified by government.</p> <p>A fully independent energy regulator should be established, and Jordan's Energy Regulatory Commission may act as inspiration for Tunisia in this regard.</p>
<p>To promote energy efficiency in all sectors to decrease primary energy demand by 30% by 2030</p>	<ul style="list-style-type: none"> • Energy subsidies mask the true cost of electricity, reducing the incentive to rationalise energy consumption. • Construction and infrastructure regulations make unclear reference to energy efficiency standards. • Lack of knowledge of new construction and operational techniques, as well as energy efficiency measures among builders and owners. • Fragmentation of laws between those governing sustainable energy efficient investment, public transport, and construction. <p>Energy efficiency is often not included in environmental impact assessment (EIA) mandates.</p>	<ul style="list-style-type: none"> • Remove inefficient energy subsidies, with higher energy costs incentivising more conservative use of energy. • Expand the mandatory energy performance certificate from only “important” types of buildings to all buildings, to provide all building owners and renters with important information on the energy efficiency of their buildings. • Introduce smart meters and informative billing practices. • Capacity building of national construction companies on new techniques would help to familiarise the domestic market. • Urban planning codes should more effectively integrate energy efficiency components in city policies, improving interactions between social (housing, mobility), economic (growth, tourism, transport), environmental (the sustainability of the resource), spatial and institutional considerations. • Explicit reference to energy efficiency in the EIA criteria would ensure that this element is addressed by environmental agencies reviewing infrastructure projects. <p>Greater political and financial support to local communities that have demonstrated an effort to implement projects related to energy efficiency.</p>
<p>To improve the agricultural sector’s contributions to mitigation and adaptation</p>	<ul style="list-style-type: none"> • Inter-sectoral fragmentation among land use Ministries leads to incomplete and segregated management plans for sustainable development 	<ul style="list-style-type: none"> • Establish an inter-Ministerial Committee on land use, for the Ministries responsible for agriculture, forestry, land, etc. to improve whole-of-Government strategies and

	<ul style="list-style-type: none"> Weak implementation and enforcement of laws to protect agricultural lands, including the ban on unregulated changes of land-use. <p>Different land use issues are addressed in an isolated manner, such as GHG mitigation potential and erosion of forests, resulting in linkages and mutually-beneficial solutions being overlooked.</p>	<p>planning on landscapes level land use management plans.</p> <ul style="list-style-type: none"> Increased capacity to monitor and enforce land-use change. Improve procedures for stakeholder engagement, monitoring, transparency and public participation in the implementation of land laws. Integrate discussions on land use management to combine strategies and proposals for measures to achieve significant GHG emission mitigation targets with measures to slow advancing desertification (for example). <p>Amend Article 1 of the Code referring to the forest heritage to link its protection and development provisions more directly to actions that seek to address deforestation and climate change.</p>
<p>To implement water resources adaptation projects to transfer and reuse treated wastewater and to improve and secure the water supplies of large urban centres</p>	<ul style="list-style-type: none"> Implementation, including monitoring and enforcement, of water management is often challenging due to intense politicisation of water resources (urbanisation vs agriculture vs industry). The introduction of a rationing system, that would limit the use of water for certain end uses, for example, has been extremely challenging. 	<ul style="list-style-type: none"> Increase transparency and regulatory safeguards in the water sector in light of the sector's commitments. Increase involvement of users in water planning and management could improve performance and lead to greater buy-in of different water users. <p>Strengthen the integration of climate change impacts in Tunisia's water governance strategy.</p>

Morocco

Priority NDC objectives	Key legal and institutional gaps	Recommendations to address gaps
<p>To reach over 52% of installed electricity production capacity from renewable sources by 2030</p>	<ul style="list-style-type: none"> There is no remuneration policy framework for solar energy use, to help projects struggling with cost effectiveness, especially with international oil prices reaching record lows. There are gaps in providing financial guarantees, particularly through feed-in tariffs or other incentives. 	<ul style="list-style-type: none"> Establish financial guarantees (such as feed-in tariffs or other incentives) in a regulatory framework that sets out criteria for and ensures payment

<p>To reduce energy consumption by 15% by 2030</p>	<ul style="list-style-type: none"> • Lack of information among building owners and renters about the energy efficiency of their buildings 	<ul style="list-style-type: none"> • Provide training sessions for independent certifiers and information campaigns for owners and tenants on energy efficiency measures and savings • Introduce energy performance certificates that provide information about the energy performance of a building (in line with minimum energy efficiency performance requirements set by the CEEB) • Smart metering and informative billing should be introduced, to improve the education of building owners and renters on how much energy they consume. <p>The Mosques program could be expanded to cover other civil buildings, so that public building can be held up as exemplary models to follow.</p>
<p>To afforest 50,000 ha of land/year</p>	<p>Lack of inter-Ministerial coordination, although such coordination is envisaged in Morocco's National Action Plan to combat desertification and drought</p>	<p>Ensure integration of all plans to achieve sustainable development of landscapes</p>

Table of Acronyms

4C	Moroccan Competence Centre for Climate Change
AFD	Agence Française de Développement
AFOLU	Agriculture, Forestry and Other Land Use
AMEE	Moroccan Agency for Energy Efficiency (l'Agence Marocaine pour l'Efficacité Energétique)
ANDZOA	Moroccan National Agency for the Development of Oases and Argan Zones (l'Agence Nationale pour le Développement des Zones Oasiennes et de l'Arganier)
ANME	Tunisian National Agency for Energy Conservation (Agence nationale de maîtrise de l'énergie)
ANPE	Tunisian National Agency for the Protection of the Environment (Agence nationale de protection de l'environnement)
APIA	Agriculture Investment Promotion Agency (Tunisia)
APII	Industrial Promotion and Innovation Agency (Tunisia)
APAL	Agency for the Coastal Protection and Management (Agence de Protection et d'Aménagement du Littoral) (Tunisia)
BOT	Build-Operate-Transfer
CATU	Planning Code of the Territory and Urbanism (Tunisia)
CBIT	Capacity Building Initiative for Transparency
CEEB	Energy Efficiency Building Code Program (le programme de Code d'Efficacité Energétique dans le Bâtiment)(Morocco)
CFT	Clean Technology Fund
CISDL	Centre for International Sustainable Development Law
CO ₂ e	Carbon dioxide equivalent
CoP	Conference of the Parties
CSP	Concentrated Solar Power
CTCN	Climate Technology Centre and Network
DRR	Disaster Risk Reduction
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ERC	Electricity Regulatory Commission (Jordan)
EU	European Union
FIPA-Tunisia	Foreign Investment Promotion Agency
FIT	Feed-in-Tariff
FPIC	Free, prior and informed consent
GCC	Gulf Cooperation Council
GDP	Gross domestic product
GHG	Greenhouse gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
GW	Giga watt
IPP	Independent Power Producer
IRENA	International Renewable Energy Agency
JIC	Jordan Investment Commission
JVA	Jordan Valley Authority
LCIL	Lauterpacht Centre for International Law
LRS	Light Rail System

LULUCF	Land use, land-use change and forestry
PPP	Public Private Partnership
PTRC	Public Transport Regulatory Commission (Jordan)
PV	Photovoltaic
MASEN	Morocco Agency for Sustainable Energy
MEMEE	Ministry of Energy, Mining, Water and Environment (Ministère de l'énergie et des mines, de l'eau et de l'environnement) (Morocco)
MEMR	Ministry of Energy and Mineral Resources (Jordan)
MEPS	Minimum Energy Performance Standards
MHAI	Ministry of Endowments and Islamic Affairs (Morocco)
MIT	Ministry of Industry and Technology (Tunisia)
MOU	Memorandum of Understanding
MRV	Monitoring, Reporting and Verification
MW	Mega watt
MWI	Ministry of Water and Irrigation (Jordan)
NDC	Nationally determined contribution
NEEA	National Energy Efficiency Agency (Tunisia)
ONEE	Office National de l'Eau et l'Electricité (Morocco)
PPA	Power Purchase Agreement
REDD	Reducing Emissions from Deforestation and Forest Degradation
REEL	Renewable Energy and Energy Efficiency Law (Jordan)
RTBM	Thermal Regulation for Buildings in Morocco (Réglementation thermique dans le bâtiment au Maroc)
SDM	Sustainable Development Mechanism
SIE	Energy Investment Company (Société d'Investissements Energétiques) (Morocco)
STEG	Tunisian Electricity and Gas Company (Société tunisienne de l'électricité et du gaz)
TEC	Technology Executive Committee
TSP	Tunisian Solar Plan
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
WAJ	Water Authority of Jordan
WTO	World Trade Organization

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