



Partnership for Market Readiness

Expression of Interest of Tunisia

February, 2014

List of acronyms

CDM	Clean Development Mechanism
DNA	(CDM) Designated National Authority
DOE	Designated Operational Entity
GHG	Greenhouse gas
ISO	International Organization for Standardization
JI	Joint Implementation
LEDS	Low emissions development strategy
MRV	Measuring, reporting and verification
NAMA	Nationally Appropriate Mitigation Action
PMR	Partnership for Market Readiness
VER	Voluntary Emission Reduction
UNFCCC	United Nations Framework Convention on Climate Change

A. Expression of interest

Partnership for Market Readiness (PMR)

Expression of interest in participating in the PMR

1. Name of the government agency submitting expression of interest

Agence Nationale pour la Maîtrise de l'Énergie (ANME) - National Agency for Energy Conservation
Cité administrative, Rue du Japon BP 213
1073 Montplaisir - Tunis
Tunisia

2. Name and contact information of designated PMR Government focal point

First Name: Nejb
Last Name: Osman
Title: Director
Department: Studies and Planning
Direct tel: (+216) 71 908 997
Direct fax: (+216) 71 906 900
Email: osman.nejb@anme.nat.tn

And

First Name: Imed
Last Name: Fadhel
Title: National Focal Point for Climate Change
Department: Directorate General for Environment
Direct tel: (+216) 70 728 679
Direct fax: (+216) 70 728 595
Email: DGEQV@mineat.gov.tn

3. Domestic mitigation action:

a. Provide an overview of domestic mitigation policies and plans and the status of the implementation - at both the national and sub-national levels.

Tunisia was among the first countries to ratify the United Nations Framework Convention on Climate Change (UNFCCC) in 1993 and the Kyoto Protocol in 2002. In this context, many initiatives focusing on climate change mitigation and adaptation have been undertaken by the Tunisian authorities and supported by international cooperation. In order to streamline these efforts, and to endow Tunisia with a long term vision that takes the recent socioeconomic challenges into account, the Tunisian Ministry in charge of Environment developed a National Strategy on Climate Change in 2012. The development of this strategy was supported by the German Federal Ministry of Economic Cooperation and Development (via GIZ) and was based on a large stakeholder consultation process that lasted more than one year and mobilized national experts representing public institutions, the private sector and civil society.

A preferential vision was adopted at the end of the consultation process that proposes a proactive and anticipatory approach for mitigation and adaptation.

As regards mitigation, the preferential vision recommends to decrease the carbon intensity of the Tunisian economy. This will require significant international support in addition to the mobilization of substantial national public and private financial resources.

The strategy defines also the main instruments for the implementation of the proposed guidelines, including the incentives for mitigation and adaptation, the institutional and regulatory arrangements and the monitoring and evaluation system of climate policy.

In parallel, different sectoral strategies and NAMAs have been developed that contribute to the implementation of the national strategy. These sectoral efforts are outlined below.

b. Briefly identify the key sectors targeted by the mitigation strategy.

➤ **Energy sector**

Emission and potential

The energy sector is the most GHG emitting sector in Tunisia with more than 55% of the national emissions¹. For that reason, mitigation policy in Tunisia is focused on the energy sector and in particular on energy efficiency and large-scale renewable energy development. Between 1990 and 2012, GHG emissions in the sector rose by 2.8% per year while the GDP increased by 4.3% per year over the same period. The voluntary energy conservation policy undertaken by Tunisia has strengthened decoupling between economic growth and greenhouse gas emissions in the energy sector which has reduced the carbon intensity by 26% during the last two decades.

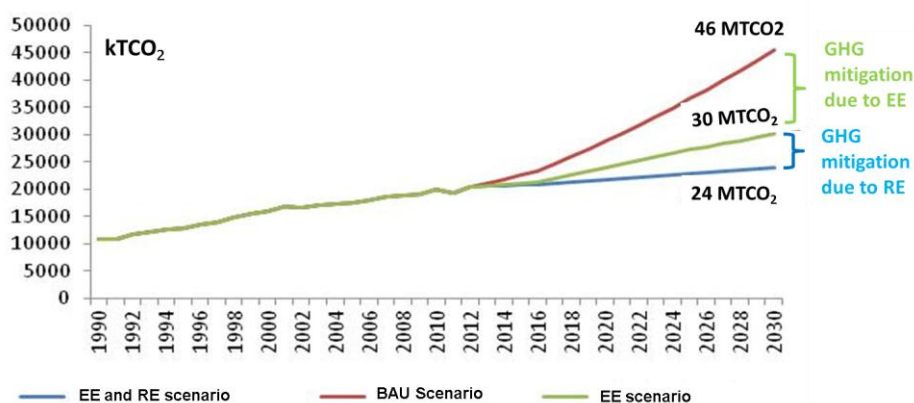
Mitigation target

The mitigation target in the energy sector is set on the basis of the energy efficiency (EE) and renewable energy (RE) strategies developed by the National Energy Conservation Agency (ANME) in 2012.

For energy efficiency, the objective is to reduce the primary energy demand by 17% in 2020 and 34% in 2030, compared to the Business as Usual scenario. Hence, it is expected that the primary energy demand in 2030 would be around 12 Mtoe instead of 19.5 Mtoe.

For renewable energy, Tunisia's target is to reach a share of 7% of the national final energy demand by 2020 and 12% by 2030. The objective for the electricity sector is to reach 30% of electricity generation from renewable resources in 2030, without considering traditional biomass.

The implementation of the RE and EE strategy will allow to reduce the GHG emissions level by 48% by 2030, of which 35% are coming from EE and 13% from RE, as shown by the following chart:



In term of cumulative values, the EE and RE strategy will allow to avoid more than 185 MtCO₂ over the period of 2014-2030. This potential can be partly realized via **NAMAs and innovative carbon market based mechanisms**.

New developments in the energy sector regarding mitigation

Complementary to the abovementioned energy efficiency and renewable energy strategies, a NAMA strategy in the energy sector has been developed with a view to enable Tunisia to position itself for access to financing, technology transfer and capacity building.

The strategy identifies the following priorities:

- Setting up an institutional structure dedicated to manage, support and monitor the development of NAMA and carbon market based mechanisms,
- Drafting NAMA sustainable development criteria,
- Building a portfolio of priority NAMAs/market mechanisms with a categorization of supported and unilateral ones,
- Developing priority NAMAs considered as economically and technically feasible and meeting Tunisia' specific needs
- Implementing an MRV system,
- Building capacities.

¹ NC

Based on this strategy, several initiatives regarding NAMAs and NMM were developed with the support of donors (mainly German Cooperation and UNDP). Among these initiatives, we can mention:

- The mitigation mechanism in the cement sector including a NAMA and aNMM component with a mitigation potential of about 8 MtCO₂e over the period 2014-2020, requiring around 970 million Euros of investment (see details below). The technical options include both low carbon energy technologies and industrial process modifications.
- The development of a NAMA on energy efficiency and renewable energy in the building sector, including solar PV connected to the grid, solar water heaters and thermal retrofitting. The NAMA is expected to achieve GHG emissions reductions of 1.2 MtCO₂e by 2020 and 6.8 MtCO₂e by 2030, compared to the Business As Usual scenario. The NAMA will also have positive impacts in terms of sustainable development, such as an access to energy services for low income households, business development, job creation, and energy cost reduction for both the government and citizens.
- A NAMA on renewable electricity generation which is under development. The proposed NAMA targets the renewable electricity generation component of the Tunisian energy conservation strategy, which is also known as the Tunisian Solar Plan. The main activities of the project include the assessment of the mitigation potential resulting from the implementation of this component, the development of a preliminary NAMA taking into account national sustainable development criteria with a distinction of unilateral activities and supported ones. Opportunities of using NMM or other market based mechanisms are also analyzed.

➤ **Industrial Processes and Product Use (IPPU)**

The GHG emissions of industrial processes and product use made up 10.5% of total emissions in 2000. The main GHG sources are respectively the mineral industry (cement production), chemical industry (nitric acid production) and metal industry (iron and steel production).

The only concrete initiative developed in this sector is the NAMA/NMM in the cement sector, as outlined below.

➤ **Waste sector**

i) Solid waste

Since more than 15 years, Tunisia has undertaken reforms aimed at establishing an environment conducive to the sound management of solid waste in Tunisia. The reforms were initiated in 1993 with the development of a national program for the management of solid waste, known as PRONAGDES (National Waste Management Program) for the period 1995-2006 which subsequently evolved into PRONGIDD (National Integrated and Sustainable Waste Management Program) which is covering the period 2007-2016. The key goals of this program are :

- Reduction of waste production at the source,
- Promotion of waste treatment and its valorization,
- Improvement of institutional, regulatory and financial framework,
- Improvement of technical and organizational aspects,
- Development of communication and awareness about waste management.

Thanks to this policy, the country reached a coverage rate of about 70% and nearly 400 -uncontrolled landfills were rehabilitated or closed.

Although there is no specific policy for mitigation in the solid waste sector in Tunisia, some components of PRONGIDD can be considered as GHG mitigation activities. This holds for example for the activities of methane recovery in landfills and composting which could be developed as a national appropriate mitigation action or be integrated into international market based mechanisms.

Furthermore, with the support of the World Bank, two CDM projects for recovery and flaring of landfill gas have been registered in 2006. The first concerns the landfill of Jebel Chekir and the second a group of 9 regional landfills.

ii) Wastewater

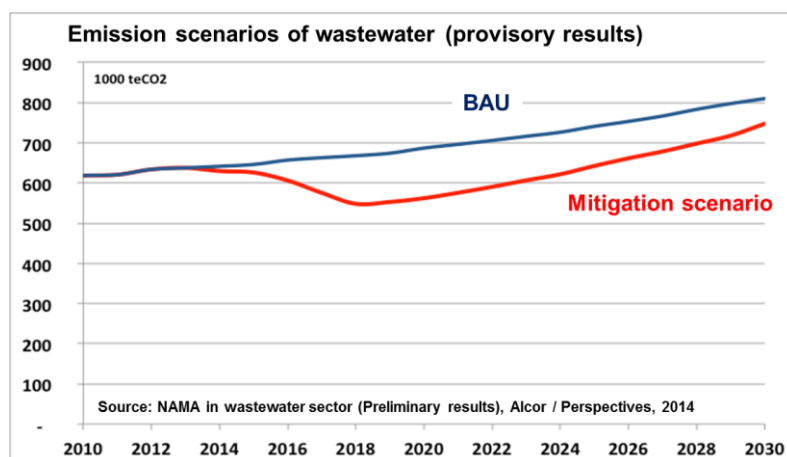
The wastewater sector is managed by a public agency (ONAS) comprising central and regional services. Its future strategy for the mid- and long-term is structured along the following lines:

- Generalization of sanitation services by stepping up connection rates in small and medium-sized cities in order to reach a connection rate in urban areas of 92% in 2016 and 95% in 2021,
- Improve the treatment capacities of overloaded plants,
- Improve the quality of treated wastewater in the current plants,
- Promote the reuse of treated wastewater, particularly for agriculture irrigation,
- Equipping large industrial zones with dedicated networks and appropriate plants for industrial wastewater,
- Moving towards new treatment technologies allowing good quality of treated wastewater while optimizing energy consumption and operation cost,
- Promote the contribution of the private sector in the sector development, etc.

In line with this strategy, ONAS is currently, with the support of the German cooperation, developing a NAMA in the sanitation sector. The preliminary results of the second report estimate a mitigation potential of 1.5 MtCO₂e over the period 2014-2030, based on the implementation of the following mitigation options under the NAMA scenario:

- ✓ Stepping up connection rate in rural area to achieve 15% in 2020 and 26% in 2030;
- ✓ Stepping up connection rate in industrial zones;
- ✓ Spreading of 25% of dried sludge on agriculture lands by 2030;
- ✓ Methane recovery from for electricity production (40% of dried sludge in 2030);
- ✓ Electricity generation from wind and PV systems;

:



➤ Agriculture, Forestry and Other Land Use (AFOLU)

The emissions of AFOLU accounted for about 30% of national emissions in 2000. A NAMA concept in the AFOLU sector is currently being developed. Mitigation options that are analysed concern mainly:

- Increasing the effectiveness of the use of artificial nitrogen fertilizer,
- Development of applied research for improving fertilizer,
- Promotion of organic agriculture,
- Enteric fermentation,
- Manure management,
- Conservation agriculture,
- Regeneration of natural forests,
- Planting for biomass production,
- Improving yields of wood use for energy purposes,
- Conversion of marginal land to multipurpose plantations.

4. Market Instruments²:

- c. **Provide a brief description of experience to date with market-based instruments, e.g., type of instrument, dates of implementation, scope, and key outcomes.**

Despite the large portfolio of potential CDM projects, Tunisia has currently only six registered CDM projects; the first project was registered in 2006. The table below provides an overview of the registered projects:

Types	N. of projects	Av. Annual ERs (tCO ₂ /yr.)	Total ER by 2020 estimates (tCO ₂ /yr.)	Issued CERs to date
Landfill gas capture and flaring	2	320,000-370,000	7,000,000	120,000
Wind energy production	2	50,000-350,000	2,800,000	0
Transport: shift from road to rail	1	30,000	180,000	0
Partial substitution of fossil fuels with biomass in cement manufacture	1	59,000	410,000	0
Total	6		10,390,000	120,000

Almost all registered CDM projects are developed by public sector entities. The landfill gas capture and flaring projects are all initiated by the public sector "Agence Nationale de Gestion des Déchets", together with the World Bank Carbon Finance Department. The wind project are initiated by the *Société Tunisienne d'Electricité et du Gaz* and funded by CDC Asset Management with the support from the carbon funds of the World Bank. The transport project is developed by the Tunisian Transport Ministry. The partial substitution of fossil fuels with biomass project is developed by "Les Ciments Artificiels Tunisiens", a private cement plant.

Programme of Activities

Tunisia has one registered (2011) Programme of Activities (PoA) called "Solar water heater programme" with 8 CPA developed by ANME and French Solvay Energy Services undertaken in conjunction with a nation-wide loan support solar program known as "PROSOL 2 – Residential". The stated goal of the PoA is to install around 30,000 solar water heaters per year in households, thereby substituting carbon intensive electricity from the grid and fossil fuel currently used to provide hot water.

Moreover, two PoAs are currently at validation stage:

- A cogeneration development program in the industry sector initiated by the ANME.
- The development of solar water heating systems in the tertiary sector in Tunisia, PROSOL tertiary. This project is developed by ANME with the financial support of the Italian cooperation, through the Mediterranean Center for Renewable Energy.

Assessment of the CDM status in Tunisia

Although the country is considered a front-runner in North Africa when it comes to energy efficiency and environmental policy, only 5% of the national CDM portfolio was mobilized and developed to the registration stage.

A problem with the CDM in Tunisia is that public institutions or state-owned enterprises are the main project executing agencies. The private sector, being executing agency of only one registered project, has hardly been engaged. One reason is that the potential savings mainly occur in small and medium sized enterprises for which it is more difficult to find interested carbon buyers.

However, with the help of international organizations and bilateral cooperation, significant progress was achieved in building the capacity of public institutions and carbon market consultants and improving the institutional framework during the last years. The projects identified for the CDM could potentially serve as a basis for the development of sectoral mitigation strategies. The unregistered

² Without prejudging future developments on market instruments, this question refers to instruments providing a price signal that create an incentive to use or invest in climate-friendly technologies and/or processes. Such market instruments can include domestic instruments (e.g., emissions trading and non-GHG based schemes such as renewable energy and energy efficiency trading systems) and international market instruments such as reformed CDM, sectoral, and NAMA crediting.

CDM projects and PoAs could, for example, be used as a starting point for National Appropriate Mitigation Actions (NAMAs), NMM or other market based mechanisms. Many design elements of PoAs are relevant for sectoral mitigation mechanisms, such as governance, eligibility criteria, baselines and MRV. This is the case for example for the thermal insulation program (PROMO-ISOL) and the grid-connected PV buildings program (PRO SOL Elec) considered as part of the mitigation components under the NAMA in the building sector.

Tunisia is willing to build on these experiences to play an active role in the development of carbon market based instruments in the future.

d. To the extent that one (or more) specific market instrument is already identified for future implementation; provide a brief overview of the status of development/implementation and its relevance to the country's overall mitigation strategy.

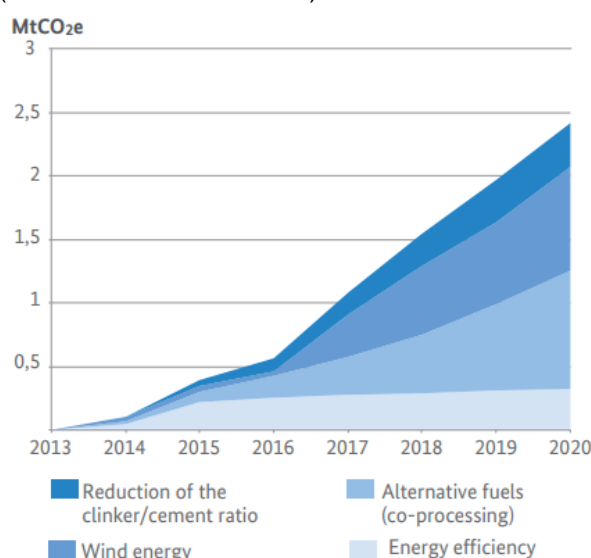
After the end of the Kyoto Protocol commitment period and the decline of the CDM, Tunisia is seeking for new international climate financing sources. As shown above, Tunisia launched initiatives on NAMA development in several sectors. However, Tunisia is trying also to explore the potential of new market-based mechanisms, such as the NMM.

Market-based instruments opportunities in the cement sector

The National Agency for Energy Conservation (ANME) has launched, with the support of German cooperation, an initiative aimed at engaging the Tunisian cement sector in a voluntary programme to reduce greenhouse gas (GHG) emissions. The mechanism has been designed with a view to being integrated into one of the mechanisms of the UNFCCC, such as the NAMAs and the **New Market Mechanism (NMM)**. The proposed mechanism aims to ease the various obstacles to the implementation of GHG mitigation measures in the cement sector, and boosting investment in less carbon-intensive technologies. This is likely to generate emissions reductions of over 8 MtCO₂e over the period 2014-2020, via a mobilisation of 970 million Euros in investment.

The discussions with Tunisian cement producers have helped identify a set of four types of emission reduction measures, allowing GHG emission savings of about 2.5 MteCO₂ in 2020:

- Energy efficiency measures;
- Renewable energy, notably wind energy;
- Finer segmenting of the cement market, allowing a reduction of the clinker/cement ratio;
- Co-processing (the use of waste as a fuel).



Implementing this mitigation scenario would lower the carbon intensity of cement production, which would drop from 0.793 tCO₂e/t cement produced in the business as usual scenario to 0.626 tCO₂e/t cement produced in the mitigation scenario, hence a decrease by 21% by 2020.

The proposed mitigation mechanism consists of four components:

- **Organisational component:** setting up of a management unit at the ANME and development and implementation of a voluntary agreement between the Tunisian

government and the cement producers.

- **Regulatory component:** support for removing the regulatory bottlenecks.
- **Technical component:** CO₂-and-energy audits development, capacity building actions, support for the technical monitoring of mitigation actions (MRV) as well as the partial financing of a pilot waste treatment platform for co-processing.
- **Financial component:** facilitating access to capital via investment subsidies for energy efficiency actions, a credit line, and an investment fund dedicated to the cement sector. The modalities of access and the amounts to be disbursed will be linked to the individual performance of the cement producers in terms of GHG emissions reductions. **This will prepare the sector for a possible future set up of a market mechanism under which carbon credits would be granted in exchange for the emissions reductions achieved.**

Market-based instruments opportunities in energy sector

In addition to the cement sector, the ANME is studying the opportunity and the feasibility of using new market mechanisms for the Tunisian Solar Plan (electricity sector). Tunisia is currently looking for international partners which would be interested in supporting the TSP through new market mechanisms.

On the other hand, Tunisia is interested in designing innovative instruments linking some of the new energy conservation incentive mechanisms in preparation in Tunisia to carbon market based instruments.

Among these we can mention two main mechanisms:

- The feed-in tariff for renewable energy electricity generation, mainly PV and wind. The new law on renewable energy electricity generation, preparing the ground for a feed-in tariff, was approved by the Government and is expected to be adopted by the National Constituent Assembly in the coming months.
- The tax on consumed energy products to feed the Energy Transition Fund (ex-National Fund for Energy Conservation) supporting energy efficiency and renewable energy projects. This new tax was introduced in the 2014 finance act which was adopted by the National Constituent Assembly and promulgated by the President in December 30th, 2013. The list of products subject to tax, the tax rate and the recovery procedure will be established by decree in the coming months.

5. Support from the PMR:

Given the novelty of the market mechanisms, Tunisia wishes to build capacities in this field. Tunisia's needs are mainly centered on the following aspects:

- Capacity building on carbon market based mechanisms and the evolution of the climate negotiations in this area;
- Institutional strengthening, in particular with regard to the national governance of climate change in general and of the market mechanisms in particular. The PMR support can be focused for example on the implementation of a coordination entity in charge of mitigation policies at the national level in consultation with the concerned institutions (Ministry in charge of Environment, ANME, Ministry of Finance, etc.);
- Definition of national guidelines for the establishment of the baselines and mitigations scenarios;
- Implementation of MRV systems at the national level that are recognized at the international level and adapted to market mechanisms (in close coordination with the inventory and MRV project at ANME supported by the German Environment Ministry);
- Identification of a carbon market based project portfolio;
- Providing the necessary technical assistance for the implementation of a market pilot project (for example in the electricity and/or cement sector);
- Allowing the Tunisian stakeholders to exchange experiences and share knowledge with the other member of the PMR.

6. Institutional setting:

The studies and planning department of ANME will coordinate the PMR efforts at the domestic level.

The following ministries and government agencies will be involved: Ministry in charge of Environment, Ministry of Industry, Ministry of Development and International Cooperation, Ministry of Finance, Presidency of the Government, Ministry of Agriculture, National Waste Management Agency, National Sanitation Utility, etc.

7. Stakeholder participation:

The main ministries, government agencies, professional associations and public companies involved in national and sectoral mitigation strategies have been engaged in the preparatory works of the Expression of Interest through individual interviews and a consultation workshop. These stakeholders will be also included in all the project stages.

The stakeholder list includes: UNFCCC National focal point (Ministry in charge of Environment), National Agency for Energy Conservation (ANME), General Directorate of Energy (Ministry of Industry), Ministry of Development and International Cooperation, Presidency of the Government, Ministry of Agriculture, Ministry of finance, National Sanitation Utility (ONAS), National Waste Management Agency (ANGed), Tunisian Company for Electricity and Gas (STEG), National Chamber of Cement Manufacturers (CNP), Tunisian Company of Petroleum Activities (ETAP), Tunisian Refining Industries Company (STIR), Tunisian Chemical Group (GCT), Tunisian Association for Energy Conservation.

8. Initiatives by other bilateral and multilateral development partners:

- NAMA strategy for the energy sector (2011-2012, supported by UNDP, implemented by ANME, completed);
- Development of a NAMA on energy conservation in buildings in Tunisia (2012-2013, part of the global 'Mitigation Momentum' project supported by the German Federal Ministry for the Environment in five countries, in Tunisia implemented by ANME);
- Establishing a mechanism for reducing GHG emissions in the cement sector in Tunisia (2012-2013, supported by German Federal Ministry for the Environment, implemented by ANME/GIZ, completed);
- Study on NAMAs on renewable electricity generation in Tunisia (2013-2014, supported by UNDP, implemented by ANME, in progress);
- Development of NAMA in sanitation sector in Tunisia (2013-2014, supported by German Federal Ministry for Economic Cooperation and Development, implemented by ONAS/GIZ, in progress);
- Development of NAMA in agriculture, forestry and land-use change sectors in Tunisia (2013-2014, supported by German Federal Ministry for Economic Cooperation and Development, implemented by Ministry of Agriculture/GIZ, in progress);
- Capacity development for greenhouse gas inventory and MRV in Tunisia (2012-2016, supported by German Federal Ministry for the Environment, implemented by ANME/GIZ,);
- Local GHG management by the City of Sfax (2013, supported by German Federal Ministry for Economic Cooperation and Development, implemented by City of Sfax/GIZ, completed).