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A compilation of questions to - and answers by - Monaco
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[Question by Netherlands](#) at Tuesday, 31 March 2015

[Category](#): Progress towards the achievement of its quantified economy-wide emission reduction target

[Type](#): Before 31 of March

[Title](#): Potential additional PaMs

Monaco is reporting a decrease of emissions by 17.4 per cent between 1990 and 2011 while the target is a reduction of 30% by 2020 compared to 1990. The ERT noted that “based on its projections, Monaco does not seem to be in a position to reach its emission target using existing domestic PaMs only and may need to put in place additional PaMs and/or make use of the market-based mechanisms”.

Can Monaco provide information on potential additional Policies and Measures?

[Answer by Monaco](#) at Thursday, 28 Mai 2015

In order to achieve the emission reduction target, additional measures are currently being defined or implemented. These measures mainly concern the energy sector in which the emission reduction potentials are the most important.

The energy production category represents approximately 30 per cent of GHG emissions. The emissions in this category originate mainly from the energy recovery from waste.

The waste management policy is currently the subject to reflexions especially related to the strategic choice to renew the energy-from-waste facility.

In this context, Monaco has undertaken a general reflection on waste management by the 2014-2015 revision of the preliminary study carried out in 2004 in order to define the new Monaco Waste Prevention and Management Plan by 2030. This Plan will contain the following objectives:

Perform an exhaustive diagnostic of waste management by consulting the main actors.

Define scenarios for the waste management evolution and enhancement by 2020 and 2030, perform an analysis of the territory opportunities and constraints in terms of waste management, a prospective approach in tonnage and an analysis of future local and regional sectors of treatment and recovery.

Study the evolving management scenarios by 2030 (technical-and-economical, environmental, and organizational analysis).

In March 2015, Monaco has launched an initiative in favor of an environmental involved trade. This approach aims to limit the use of plastics among retailer and customers.

It has been announced the prohibition by 2016 of the importation and distribution of single use plastic bags in the Principality of Monaco. In 2019, this ban will be extended to the food packaging. Finally, by January 2020, these prohibition measures will also include disposable kitchen utensils. These measures will be included within an upcoming regulatory text, in the waste management field.

Regarding the renewal of the energy-from-waste facility and the preparatory work for the definition of this new installation, Monaco enlisted the expertise of the French Alternative Energies and Atomic Energy Commission and its laboratory LITEN (Laboratory for Innovation in New Energy Technologies and Nanomaterials) which is one of the major European research centers on the energy's new technologies.

The ongoing studies focus on both the future treatment process and the optimization of energy distribution that is produced.

A study initiated in 2015 should offer an analysis of different alternative technologies currently available, and the introduction of new technologies possible in a 15-year horizon.

The general purpose of these studies is to offer improvement scenarios for Monaco's current energy-from-waste system, based on technical and economic criteria (energy efficiency, cost) and on environmental criteria (environmental impacts, lower CO2 emissions).

In parallel, work has already been undertaken on the optimization of the energy production and the energy distribution of the waste-to-energy facility, including some expansion possibilities through some innovative solutions such as renewable energies and thermic storage.

For more than 20 years, Monaco has undertaken an active mobility policy committed to the environment. The implementation of this policy resulted in the improvement of the ambient air as well as transport conditions, traffic and car parking. This mobility policy also led to a gradual decline in fuel sales on the territory. However, this reduction cannot be assigned to a particular measure.

In order to strengthen actions in favor of a clean mobility, some additional measures have already been carried out (CO) or are planned on a short (ST), medium (MT) and long (LT) term.

Support the purchase of clean vehicles through the strengthening of the electric or hybrid vehicle purchase grant (ST).

Support soft and collaborative mobility: strengthening of the power-assisted bike rental service (<http://www.cam.mc/services.php?idservice=12>) (CO), implementation of an electric car sharing rental service (<http://www.mobee.mc/>) (CO).

Strengthening of intermodality and interoperability of transports, joint funding with the French local authorities of a bus line between Monaco and neighboring communes (CO), strengthening multimodal and multi operator ticketing (CO).

Implementation and development of a smartphone application for Monaco's urban transport (CO).

Free city buses for all students attending school in the Principality (CO).

Signature of an agreement between France and Monaco on teleworking which bills in the process of submission within the respective parliaments (ST, MT, LT).

In terms of evolution of urban infrastructure and logistics:

Extension of logistic and urban distribution facilities, expansion of the urban distribution center, creation of a merchandise reception center at the city gateway in order to optimize local deliveries, mostly directed to residents with an increase in volumes of the packages due to e-commerce (MT, LT).

Creation of a tunnel linking the western entrance of Monaco to the commercial and industrial area of Fontvieille, to eliminate a significant amount of traffic in city center (MT).

Project development of a car park relay at the city gateway, coupled by 2025 to a dedicated public transport corridor (LT).

Planning of new pedestrian walkways, within the framework of these programmed developments in order to ensure the cross-connections (LT).

The sector of stationary combustion in industrial, commercial and residential buildings also accounts for approximately 30 per cent of the Principality's emissions.

As part of the action's reinforcement of its Energy Climate Plan, Monaco is currently focusing its reflections (second semester 2015) on the definition of an adequate energy transition strategy, with the objectives of decreasing GHG emissions from this sector accordingly to the objectives that have been set.

The building sector is also the largest consumer of electrical energy, thus the implementation of this strategy must also be consistent with the overall objectives of the Energy Climate Plan which are set for 2020, namely:

Improve energy efficiency by 20 per cent.

Consume 20 per cent of final energy from renewable sources.

Maintain electricity consumption equal to that of 2006.

The development and the implementation of this energetic transition strategy must define in the short and the medium term the complementary measures that will allow a gradual removal of the use of fossil fuel use in building heating in order to contribute to the achievements of the objectives.

This strategy must also take into account the measures to control energy demand (energy efficiency improvement, maintaining peak power consumption) and the development of renewable energies through the analysis of potential improvements in energy requirements and the estimation of local renewable energy potentials (sea water heat pump, geothermal, solar energy).

Question by Brazil at Tuesday, 31 March 2015

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: Translation

Observation: An extension of the deadline for questions about Monaco's BR should have been considered as well as for all countries that are reporting in any UN official language other than English, which should be considered the working language for all activities that involves all UN Parties.

Answer by Monaco at Thursday, 28 Mai 2015

Monaco notes this observation.

Monaco is committed to apply The Vade-mecum of the Organisation internationale de la Francophonie (OIF), which requires the use of French.

Question by China at Monday, 30 March 2015

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: additional PaMs

In WM scenario, no matter the LUULCF sector will be included or not, the emission of Monaco in 2020 will be about 24% lower than 1990 level, while the QEWERT is a 30% decrease. What additional policies and measures will Monaco take to fulfill its commitment?

Answer by Monaco at Thursday, 28 Mai 2015

Monaco territory is considered to be entirely urbanized. The vegetated surfaces are composed by park, gardens, as well as a few cliffs covered by natural vegetation.

CO₂ removal from tree capture from the “settlements remaining settlements” category represents about 0,038 GgEq CO₂ (0.04 per cent of the total annual emissions).

Given these national circumstances, Monaco has decided not to account CO₂ emissions and removal processes by trees as part of the compliance to the objectives.

However, this information is reported, for guidance only, in the national inventory report.

Also, as part of the LULUCF sector’s development scenarios, only the emissions related to the use of fertilizer in parks and gardens have been reported.

Information about additional policies Monaco intends to take in order to fulfill the commitment is detailed in the answer to the question asked by the Netherlands on Tuesday, 31 March 2015 listed below:

The energy production category represents approximately 30 per cent of GHG emissions. The emissions in this category originate mainly from the energy recovery from waste.

The waste management policy is currently the subject to reflexions especially related to the strategic choice to renew the energy-from-waste facility.

In this context, Monaco has undertaken a general reflection on waste management by the 2014-2015 revision of the preliminary study carried out in 2004 in order to define the new Monaco Waste Prevention and Management Plan by 2030. This Plan will contain the following objectives:

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The general purpose of these studies is to offer improvement scenarios for Monaco's current energy-from-waste system, based on technical and economic criteria (energy efficiency, cost) and on environmental criteria (environmental impacts, lower CO2 emissions).

In parallel, work has already been undertaken on the optimization of the energy production and the energy distribution of the waste-to-energy facility, including some expansion possibilities through some innovative solutions such as renewable energies and thermic storage.

For more than 20 years, Monaco has undertaken an active mobility policy committed to the environment. The implementation of this policy resulted in the improvement of the ambient air as well as transport conditions, traffic and car parking. This mobility policy also led to a gradual decline in fuel sales on the territory. However, this reduction cannot be assigned to a particular measure.

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The sector of stationary combustion in industrial, commercial and residential buildings also accounts for approximately 30 per cent of the Principality's emissions.

As part of the action's reinforcement of its Energy Climate Plan, Monaco is currently focusing its reflections (second semester 2015) on the definition of an adequate energy transition strategy, with the objectives of decreasing GHG emissions from this sector accordingly to the objectives that have been set.

The building sector is also the largest consumer of electrical energy, thus the implementation of this strategy must also be consistent with the overall objectives of the Energy Climate Plan which are set for 2020, namely:

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This strategy must also take into account the measures to control energy demand (energy efficiency improvement, maintaining peak power consumption) and the development of renewable energies through the analysis of potential improvements in energy requirements and the estimation of local renewable energy potentials (sea water heat pump, geothermal, solar energy).

However, in the case where these additional measures were not be sufficient, the use of market-based mechanisms is not excluded.

Question by China at Monday, 30 March 2015

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: mitigation effects

The implemented and adopted PaMs with the highest mitigation effects are in the energy and industrial processes sectors. Can Monaco provide also estimations of the mitigation effects of the PaMs reported in CTF table 3 for other sectors?

Answer by Monaco at Thursday, 28 Mai 2015

Solvent and other products use sector accounts for emissions from painting operations, laundry services, joineries, printing companies, as well as aerosol propellants.

This sector presents an emission level of about 0.04 GgEqCO₂/year and is not a key category.

Monaco did not estimate the reduction effects considering the limited reduction potential that could be achieved by specific measures to the Principality or in terms of Tier 1 methodologies that are used for emission estimates.

Taking into account the national circumstances and in particular the customs agreement with France, the potentials for reducing emissions within this sector in Monaco are mainly due to changes in technologies related to the activities of the

different categories, as well as possible evolutions of the international, European or French regulatory context that could have an impact on these activities in Monaco.

No specific complementary measure to the Principality is scheduled to date, which does not exclude the different actor's initiatives in these sectors for environmentally responsible approaches.

The emissions from waste sector take into account the waste water treatment and the sewage sludge incineration.

A requalification project of water treatment facilities is planned for 2020, including strengthening the treatment capacity.

Currently, the type of future installations treatment process is not already selected. Therefore it was not possible to estimate the potential effects of this new facility on emissions (type of treatment - quantity of sludge produced).

In the framework of the requalification project of the energy recovery from waste factory planned for 2017, sludge incineration with household waste is one of the characteristic that should be renewed in the new facilities. However, as this new waste treatment technology is not yet chosen, it was not possible to put into perspective the emissions evolution.

However, as these activities should be maintained, no major changes are expected concerning the emissions in this sector.

Within the sector of land use, land-use change and forestry activities, green spaces and trees preservation is included in the urbanism regulations planning.

In evolutionary terms, the creation and rehabilitation of new spaces must allow a green spaces areas increase in the coming years.

However, Monaco has opted not to record the absorption and desorption of carbon by trees green spaces for the targets achievement for reducing greenhouse gas emissions.

Emissions from this sector are exclusively due to the fertilizers use within these green spaces. The implementation of eco-responsible practices in the management of these areas, especially those owned by the State, gradually leads to the withdrawal of the use of chemical fertilizers.

The effects related to these new practices were estimated based on the level of use observed in the recent years and the result is a reduction of 0,005 GgEqCO₂ per year compared to baseline observed early in the period. In the absence of additional data on the implementation of these practices, projected emission levels emissions to the end of 2030 are only based on the expected increase in green space area.

[Question by China](#) at Monday, 30 March 2015

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: projections by sectors and by gases

In WM scenario, the projection by sectors and by gas are inconsistent. Could Monaco provide further clarification?

[Answer by Monaco](#) at Thursday, 28 Mai 2015

For some activity data with low values, rounded up values presented in the tables may suggest errors or discrepancies in reporting (for instance in Tab 5.5, page 157, AME-SME in the case of SF6).

Monaco will present these values in a clearer form in the future submissions.

Within the Tab 5.2 table, page 151 Scenario AME, headings reversals can be observed in the gas column regarding the road transport sector (1A3b).

These reporting errors have no effect on the emissions counting in this sector.

Within the Tab 5.5 table, page 159 Scenario AME, in the Automotive Air Conditioning category 2F2IIAF1.6, activity data are presented within the table Tab 5.5, p.160, SME Scenario instead of the data Emissions of R134a.

This error has no effect on the emission data shown in the table Tab 5.5, page 159 Scenario AME.

Within the Tab 5.9 table, page 168 Scenario AME, in the case of CO2 gas, there is a reporting error in category 2 on industrial processes.

The actual values are lower than those reported in the summary table. However it does not affect the results for the objectives achievement.

Within the Tab 5.1 tables, pages 148-149, AME-SME scenarios, in the category 1A1A Heavy fuel, values for CH4 and NO2 are badly reported.

This error in presentation concerning these values unit does not affect the total emissions data (sum of various gases emissions) in this category.

In the 1A1A category titled Energy recovery from green waste, the CH4 emissions value is actually the activity data of this gas for this category, regarding NO2, the proposed emission value is wrong. The use of the appropriate emission values raises the total emissions in this category.

In the 1A1A category titled Energy recovery from waste, errors in reporting and calculations are observed for CO2. The actual emission values are slightly higher than those previously announced.

These observations raise the emission level in this category without changing the conclusions regarding the objectives achievement.

Question by European Union at Wednesday, 25 March 2015

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: Use of market mechanisms

Does Monaco intend to use market mechanisms to achieve the targets? If yes, to which extent and what is the associated effect on the emission level projections for the period up to 2020? Is use of international credits foreseen and if so, to what extent?

Answer by Monaco at Thursday, 28 Mai 2015

The Principality of Monaco intends to reach its targets by implementing domestic emission reduction measures.

However, in the case where these additional measures should not be sufficient, the use of international reduction unit transfer mechanisms will not be excluded, in particular the clean development mechanism.

Therefore, a partial compensation of the energy sector emissions (category 1A1 energetic production) up to 10% of Monaco's global emissions has already been studied.

Question by European Union at Wednesday, 25 March 2015

Category: Progress towards the achievement of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: Decoupling of economic growth from GHG emissions

To what extent is economic growth decoupled from GHG emissions?

What have been the main effects of the existing policies and measures on the emission trends? What have been the main deviations from expected results and what in your view has caused this?

[Answer by Monaco](#) at Thursday, 28 Mai 2015

The most important GHG emission sector in Monaco is energy. Most of the emissions of the energy sector are accounted in the following category:

Fuel combustion- Public Electricity and Heat Production done by Waste disposal in energy facilities (30.89% of total emissions in 2011).

Fuel combustion in Residential, commercial and institutional sector (29.88% of total emissions in 2011). Transport (27.29% of total emissions in 2011).

Major effects of PaM's in GHG emissions reduction have been achieved in these categories.

For Public Electricity and Heat Production category, in 2011 a decision allowed to limit the tonnage of incinerated waste at 50 000 tons per year while insuring the supply of energy by the facilities. This measure aims to limit the quantity of foreign waste incinerated together with the MSW from Monaco. This measure set an upper limit on emissions of about 30Gg EqCO₂ per year instead of a maximum noted at 45 Gg EqCO₂ in 2001 for this category.

Emissions in Fuel combustion in residential, commercial and institutional sector are the result of domestic fuel and gas combustion. Urban renewal and the banning of domestic fuel boiler in new building are the mains PaM's wich leads to a significant decrease of the emission for this category (from 45 Gg to 30 Gg in 2011).

Quantifying the direct effects of PaM's in transport category is more difficult because many of them have indirect effects. Major part of emission in this category is based on fuel selling. Due to territory scale and similar price of fuel with France (custom agreement) the decrease of emission is the result of combined PaM's of Monaco, France and European Union.

However, Monaco implements a clean mobility policy, which effects result in a significant improvement of air quality, the reduction of fuel sales and the related reduction of GHG emissions by transport.

On energy production and stationary combustion sectors, the main driver of GHG emission evolution are not directly linked to economic activity: quantity of wastes incinerated, decreasing of the use domestic heating oil.

The consumption of electricity in Monaco, mainly due to residential, commercial and institutional activity, is more directly coupled with economic activity and growth. But, increase of energy efficiency results in a constant electricity consumption since 2005.

Fuel sales are, to some extent, linked to the economic activity. This influence was observed during the economic crisis in 2009-2010, when a reduction in the sales of fuel was observed. Afterward, fuel sales increased to reach the trajectory of decay which was previously observed.

Considering these national circumstances, a correlation between economic activity and GHG emission change in Monaco can't be directly highlighted.

The main unexpected result came from the Industrial sector with an important increase of emissions due to the steep increase of the use of mobile and stationary air conditioning.

Question by European Union at Wednesday, 25 March 2015

Category: Assumptions, conditions and methodologies related to the attainment of its quantified economy-wide emission reduction target

Type: Before 31 of March

Title: Estimation of LULUCF emissions and removals

How does Monaco estimate its LULUCF emissions and removals in its emission levels' projections over the period? What are the methodological approaches used and how do they impact on the assessment of the progress to the QEWERT?

Answer by Monaco at Thursday, 28 Mai 2015

In Monaco, the territory is considered as exclusively urban. Within this urban space, the area of vegetated cover is made up of parks, gardens, and some cliffs covered with natural vegetation.

Given these territorial characteristics, Monaco has decided not to record GHG Emissions and removals within this category for the achievement of the QEWERT.

The emissions and absorption calculation is however realized and communicated only for informational purposes, within the framework of the National Inventory Report and the projections carried out to assess the progress accomplished to achieve the QEWERT.

The estimation methodology which is used is based on the variation of the surface of the green spaces and the associated Biomass growth.

The urban act (Order n. 3.647 of the 09/09/1966 regarding urban planning, construction and public road network) obliges the creation of green spaces during the construction operations (from 35% to 50% of the surface area of the property). Therefore it's observed that the total surface of green space in Monaco is constant,

and even slightly increasing, thanks to the rehabilitation of old parcels occupied by infrastructures or the creation of new surfaces.

According to the calculation realized in 2012, the category establishments remaining establishments represented a 0.038 GgEq CO₂ absorption; that is to say approximately 0.04% of the national emissions.

In light of these elements, it is not planned to include in the future, the accounting of this category accounting the framework of the QEWERT. The calculations for this category will continue, however, to be reported in the framework of the national inventory report and the projection calculations.

Within the LULUCF sector, only the emissions related to the use of fertilizers within the framework of the maintenance of parks and gardens are accounted in this sector for QEWERT .
