

## MONACO

### Country at a glance

- Population: 35,800 (2010) [1]
- Total area: 2.2 sq. km [2]
- Carbon emissions per capita: N/A metric tons (2010) [3]
- Energy consumption per capita: N/A MWh (2010) [4]
- Percentage of global carbon emissions: N/A 0.03% (2010) [3]



The first yacht to run on solar energy.

[www.montecarlodailyphoto.com/2010/09/monaco-yacht-show-planet-solar.html](http://www.montecarlodailyphoto.com/2010/09/monaco-yacht-show-planet-solar.html)

### ***Around the world on solar energy, Monaco***

*Monaco is famous for yacht and yacht clubs. The yacht is owned by a German company that pioneered the solar energy business. The motors run on solar energy and the batteries can enable the boat to run for three days without sunlight. The luxurious energy efficient yacht is priced at 14 million Euros.*

### Stand on climate change

Monaco or officially known as the Principality of Monaco signed the Kyoto Protocol on 29 April 1998. The protocol was ratified on 27 February 2006 and was later entered into force on 28 May 2006. The Principality of Monaco joined the protocol as an Annex-I member country. However, they had no obligations for emissions reduction.

### National climate change programmes

Monaco is regarded as one of the world's smallest countries with very little land and natural resources with only an area of 2.2 square kilometers. Under the leadership of Prince Albert II, Monaco has been an active advocate of global climate change policy-making. Although the country's carbon emissions and energy consumption are negligible, the Principality of Monaco still has adopted an Energy Climate Plan which serves as the main document outlining the nation's plans, strategies and policies towards climate change.

### Carbon neutral by 2050 [5]

During the 15th United Nations Climate Change Conference in 2009 in Copenhagen, the country's Prince unveiled new directions for the Principality. Monaco will take part in efforts to stabilize the global warming of the planet by reducing its greenhouse gas emissions.

The Principality of Monaco laid out the following targets to reduce greenhouse gas emissions by:

- 30% reduction by 2020, and
- 80% reduction by 2050 (by which time the Principality will be carbon neutral from 1990 levels).

In addition, the Prince's Government funds projects in a number of developing countries, forming part of the Clean Development Mechanisms (CDMs) laid down by the Kyoto Protocol.

### **Energy Savings Programme in Public Buildings**

As part of the Climate and Energy Plan, the government of Monaco also undertook an Energy Savings Programme for public buildings. Energy use on these buildings is monitored through a remote management system by the government's intranet network. Energy efficiency projects have also been carried out on these sites, for example the installation of thermal solar panels at the École Saint-Charles and photovoltaic solar panels at the Villa Girasole.

In 2011, 26% of savings in energy consumption compared to 2006 levels was made over all of these sites, which have a total built-up surface area of 240,000 square meters. This represents a saving of 4.45 GWh, equal to the annual consumption of 450 households of 4 inhabitants, and a saving to the state economy of around 400,000 euros. A detailed analysis of the results shows a reduction in energy consumption of 37% to 50% since 2006 on sites where energy efficiency projects have been implemented since 2006, such as the Complexe des Carmes, the Annonciade building, Saint-Charles, the Tourist Office/Department of Tourism or the Villa Girasole. Positive Progressing results are also being seen for other sites on which such projects are in progress, including various car parks (Grimaldi Forum, Boulingrins, des Pêcheurs, des Moulins) and schools (La Cachette, les Révoires) [6].

For 2012 the development of energy efficiency projects will be characterized notably by the installment of separate monitoring systems at the Ministry of State and in the most energy intensive car parks.

### **Some notables measures for GHG reduction**

In line with the provisions of the Kyoto Protocol, Monaco has also set itself the target of improving energy efficiency by 20% and achieving 20% of final energy consumption from renewable sources by 2020. To this end, the deployment of the Climate and Energy Plan includes technical, regulatory, financial and awareness-raising campaigns [7].

1. Ban on oil heating in new construction sites and zones
2. Step up in selective waste sorting activities
3. Mobility policy: focusing on public transport (bus & train) and electric mobility (cars, bicycles, public elevators).

### **Energy Demand Management (DSM)**

Under this programme, energy renovations of state property and high environmental quality (HQE) labelling for new public construction have been adopted. A host of incentives for both public and private businesses have been introduced. Initiated in 2005, this programme covered 42 buildings and resulted in 21% overall reduction in energy consumption.

For HQE labelling, the Public Works Office (STP) have implemented new public buildings such as the LTHMC, Yacht Club and the New Parliament Building. These developments are also certified by third-party organizations such as Cerqual Housing Certification and Certivea Tertiary Certification.

Development of sea-water heat pumps: 64 heat pumps have been added as part of a renewable energy programme that accounts for 17% to 19% of overall energy consumption in the Principality. The use of sea-water heat pumps saves an equivalent of 15,000 metric tons of oil/annum for Monaco. Also, the government provides 30% subsidies on equipments of Solar Panels as part of the Sustainable Development Framework.

### **Ministries involved in climate change/energy policy making:**

Ministries involved	Web links
Ministry of Foreign Affairs	<a href="http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Foreign-Affairs">en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Foreign-Affairs</a>
Ministry of Finance & Economy	<a href="http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Finance-and-Economy">en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Finance-and-Economy</a>
Ministry of Health & Social Affairs	<a href="http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Health-and-Social-Affairs">en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Health-and-Social-Affairs</a>
Ministry of Public Works, the Environment and Urban Development	<a href="http://en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Public-Works-the-Environment-and-Urban-Development">en.gouv.mc/Government-Institutions/The-Government/Ministry-of-Public-Works-the-Environment-and-Urban-Development</a>

#### Education institutes involved in climate change/energy policy making:

Education Institutes involved	Web links
Oceanographic Institute of Monaco	<a href="http://www.institut-ocean.org/">www.institut-ocean.org/</a>
The Mediterranean Science Commission – Marine Environmental Laboratory of Monaco	<a href="http://www.ciesm.org/online/institutes/inst/Inst85.htm">www.ciesm.org/online/institutes/inst/Inst85.htm</a>

#### References

- [1] “World Population Prospects: The 2010 Revision.” Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat.
- [2] “CIA - The World Factbook.” Available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/th.html>. [Accessed: 12-Mar-2013].
- [3] CO<sub>2</sub> Emissions from Fuel Combustion Statistics database 2012, “Indicators for CO<sub>2</sub> emissions.” © OECD/IEA, 2012.
- [4] World Energy Statistics and Balances database 2012, “World Energy Balances.” © OECD/IEA, 2012.
- [5] Climate and Energy Plan in Town – Department of Environment. Principality of Monaco. Available at: <http://en.gouv.mc/Policy-Practice/The-Environment/The-Climate-and-Energy-Plan-in-the-town>
- [6] Energy Savings in Town – Official website of the Government of Monaco. Available at: <http://en.gouv.mc/Policy-Practice/The-Environment/The-Climate-and-Energy-Plan-in-the-town/Energy-saving-in-the-Principality>
- [7] Energy Climate Plan of the Principality of Monaco. Available at: [http://www.worldenergy.org/documents/monaco\\_\\_energy\\_climate\\_plan.pdf](http://www.worldenergy.org/documents/monaco__energy_climate_plan.pdf)  
[http://www.entwicklung.at/uploads/media/Country\\_Strategy\\_Macedonia\\_2010-2012.pdf](http://www.entwicklung.at/uploads/media/Country_Strategy_Macedonia_2010-2012.pdf)