



**Methodological sheets for
the complementary indicators
to monitor the Mediterranean Strategy for
Sustainable Development MSDD**

**Priority Area n° 2
ENERGY AND CLIMATE CHANGE**
Working Document



Plan Bleu
Regional Activity
Centre

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Complementary Indicators List

Energy and Climate Change

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Introduction

Reflections on sustainable development indicators for the Mediterranean follow the global trend: an initial set of indicators was defined (as in the case of the 130 indicators selected in the 1990s, on the basis of the 250 indicators of the UN CSD, and according to regional requirements), to appraise and analyze the worldwide situation as regards sustainable development. The current stage involves the definition and selection of monitoring indicators for policies and strategies. In the Mediterranean, priority MSSD, 4 priority indicators have been retained and adopted by the Contracting Parties to the Barcelona Convention.

Additionally, complementary indicators, proposed in this document, should allow a more in-depth MSSD monitoring.

This selection was based on the existing work carried out at the international level, in particular by the European Environment Agency, Eurostat, the International Agency for Energy, the UN Economic and Social Affairs Department and the International Atomic Energy Agency have published the results of joint actions (Energy Indicators for Sustainable Development : Guidelines and Methodologies, 2005). The conclusions and results were adapted to regional specifics and to the monitoring of MSSD objectives to select complementary indicators.

Those complementary indicators are not systematically directly linked to MSSD objectives. They monitor expected evolutions following the setting up of the orientation/actions of the MSSD.

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STRATEGY FIELD ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE	TYPE PRIORITY INDICATOR	MCSD ENERGY SAVING (69)
External Energy Dependency	ENE_C01	

Strategic objective:

This indicator does not refer directly to an objective of the MSSD but actions/orientations suggested should result in a decrease of the energy dependency.

Rationale:

The projected high growth in energy demand for the South and East Mediterranean neighbouring countries inevitably encourages us to consider the countries' ability to ensure their own energy supply, and the evolution of their energy dependencies.

For mainly geo-political reasons, with the growing concentration of petrol reserves, energy supply to the world hydrocarbon market could become increasingly more expensive and risky.

By developing RE and RUE, the risks relative to increased energy dependency are lowered, due to the fact that nationally-produced RE is not threatened by international geo-political risk factors, nor is it likely to reach the situation where fossil energy supplies will have run out.

RUE also diminishes the risk factor indirectly by limiting consumption increase, and the ensuing need to import energy.

Definition:

Percentage of energy imported compared to the total energy supply, and to the 3 main import suppliers compared to the total energy import, for a particular year and per type of fuel (crude oil and petrol products (i), gas (ii) coals (iii), and electricity (iv)).

This is a double indicator - its 2 ratios are defined as follows:

1. Energy dependency rate:

$[(Imports - Exports)/Domestic\ demand]*100$, or otherwise:

$[(Domestic\ demand - Domestic\ supply) / Domestic\ demand]*100 = [net\ imports/ Domestic\ demand]*100$

2. Dependency rate regarding the number of supply countries (or customers) :

⇒ For net importing countries:

Percentage of imported energy provided by the first three supplier countries

$[(Total\ sum\ of\ 1^{st} + 2^{nd} + 3^{rd}\ Suppliers'\ energy\ imports)/Total\ imported\ energy] *100$

The total product and the percentage per fuel type should be expressed for each of these elements.

⇒ For net exporting countries:

Percentage of exported energy sold to the first 3 client countries

$[(Total\ sum\ of\ 1^{st}, 2^{nd}\ and\ 3^{rd}\ client's\ exported\ energy)/Total\ exported\ energy] *100$

The total product and the percentage per fuel type should be expressed for each of these elements.

Unit:

- Percentage: %

Objective and/or targeted value:

Some countries have established their own recommended level for imported energy.

Although this is not amongst the specific SMDD objectives, if it is introduced, the country's energy dependency, along with its vulnerability, can be reduced – particularly as far as volatile price increases and the risk of delivery stoppages are concerned.

The aim is for this indicator to decrease. A reduction of 18% to 2025 for the entire Mediterranean basin could be a given target. This is the figure specified in the alternative OME and the Plan Bleu's report entitled "A Sustainable Future for the Mediterranean: Blue Plan's Environment and Development Outlooks". Earthscan, November 2005.

Methodology indicators:

- Energy dependency Rate:

Net energy import is calculated by subtracting exports from imports, with both measured in oil equivalents. Imports and exports are the amounts that have crossed the national territorial boundaries of a given country, both with and without customs clearance. A negative value for net imports indicates that the country is a net exporter.

If accurate data are not available on imports and exports, then net imports can be estimated as energy use minus production, both measured in oil equivalents.

This indicator is computed by calculating the ratio of net imports to consumption if the country is a net importer, or the ratio of exports to production if the country is a net exporter. The indicator is computed for primary energy, in total, and by fuel and electricity.

- Dependency rate with regard to the number of supply countries:

The countries which export energy are dependent on both demand fluctuations and product pricing. The import and export figures here cover gross rather than net figures.

- Products:

The following concepts and definitions for the elements within this indicator are specified in the report entitled "*Energy Indicators for Sustainable Development: Guidelines and Methodologies* – IEA, UNDESA, IEA, Eurostat 2005":

Oil: Quantities of crude oil and petroleum products imported or exported under processing agreements (i.e. refining on account) are included. Quantities of oil in transit are excluded. Crude oil, natural gas liquids (NGL) and natural gas are reported as coming from the country of origin; refinery feedstocks and petroleum products are reported as coming from the country of last consignment. Re-exports of oil imported for processing within the country are shown as exports of products from the processing country to the final destination.

Coal: Imports and exports are the amount of fuels obtained from, or supplied to other countries, whether or not there is an economic or customs union between the relevant countries. Coal in transit is not included.

Electricity: Amounts are considered as imported or exported when they have crossed the national territorial boundaries of a given country.

- Mandatory data:

Statistical data from available Energy statistics and External Trade data need to be used to calculate this indicator:

- Total primary and final energy use, imports, exports, production by fuel — oil, gas, coal, etc. – and by main partner countries (exporters or importers)
- Electricity imports, exports, consumption and generation.

Geographical Scope:

NATIONAL LEVEL	CATCHMENT AREAS	MEDITERRANEAN COASTAL AREAS (NUTS 3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

References:

- International Energy Agency

- Source: Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005
- OECD

International data sources:

- International Energy Agency: <http://www.iea.org/>
- Eurostat: <http://www.europa.eu.int/comm/eurostat/>
- United Nations: comtrade database (External Trade Statistics)
- World Bank

Cautions for use:

The import and export figures for some types of fuel are not always available.

In cases where the trade figures are not available, the net import figure can always be calculated approximately by subtracting the energy demand from the production total.

These two elements of this indicator should be mentioned together, as they are mutually complementary. The more dependent a country is on imported energy, the more externally dependent it is, particularly when there are only few supplier countries.

Methodology Annexe:

STRATEGY FIELD	TYPE PRIORITY INDICATOR	MCSO ENERGY SAVINGS 71
ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE		
RE capacity installed per inhabitant	ENE_C02	

Strategic objective:

Enhance the potential RE.

Rationale:

This indicator leads to a more accurate comparison of the use of RE between the countries, by leaving aside the difference in population sizes. As an example, the total number of thermal solar panels (water heating system) in a large country could be very high, but if compared to the number of inhabitants, the total rate could be inferior to that of a small country.

This indicator gives better visibility of the country's level of commitment to RE.

Definition:

Wind, Photovoltaic and thermal solar energy capacity installed per inhabitant.

Units:

- Wind energy: watts per inhabitant
- Photovoltaic solar energy: watts per inhabitant
- Thermal solar energy: m² panels per inhabitant

Objective and/or targeted values:

No specific figure set in the MSSD objectives.

To adhere to the MSSD's recommendations, the indicator's value should be on the increase.

Methodology Indications:

- Mandatory Data:

To calculate this indicator, demographic data for the whole population, and figures from energy statistical data need to be used.

Geographical Scope:

NATIONAL LEVEL	CATCHMENT AREAS	MEDITERRANEAN COASTAL ZONES (NUTS 3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

References:

Sources of international data:

- United Nations, Statistical Energy yearbooks, Demographic Statistics.
- IEA (2004), Renewable Information, IEA, Paris
- World Resources Institute

Cautions for use:

Methodology Annexe:

<p style="text-align: center;">STRATEGY FIELD</p> <p>ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE</p>	<p style="text-align: center;">TYPE</p> <p style="text-align: center;">PRIORITY INDICATOR</p>	<p style="text-align: center;">MCSD</p> <p style="text-align: center;">ENVIRONMENT</p> <p style="text-align: center;">AIR</p> <p style="text-align: center;">110</p>
<p>Efficiency of electricity conversion and distribution</p>	<p style="text-align: center;">ENE_C03</p>	

Strategic objective:

Promote rational use of energy.

Rationale:

Rational use of energy implies both an improvement of the energy production/conversion yield, and to better distribution. A large amount of primary energy (approximately one third in 2000) is used to produce electricity. The type of combustible and the technology used in power plant are key factors for the efficiency of energy conversion efficiency. Electricity production uses mainly natural gas, petrol and coal. Planning of the construction of electricity infrastructures is of key importance to respond to the ever-increasing electricity demand from the SEMC (Southern and Eastern Mediterranean countries).

As a result of this, this sector is of extreme strategic importance to energy efficiency with equal regard to both production and distribution. Energy losses from the electricity network are frequently estimated at approximately 30% of total distribution. There are additional regular losses due to illicit connections and unpaid bills.

This indicator is justified by the visibility it brings to energy efficiency – both production and distribution.

Definition:

The efficiency of energy conversion and distribution, including energy production from fossil fuel, the efficiency of petrol refinement, and losses during transport and distribution of gas and electricity.

Multiple indicator:

1. Efficiency of electricity production from fossil fuels:

Electricity production from fossil fuel (petrol, gas, coal) / use of fossil fuels

2. Efficiency of electricity transport and distribution:

Final electricity consumption / electricity offer

Unit:

This indicator's components can be defined in energy units and converted to toe (tons of oil equivalent).

Objective and/or targeted values:

There are no defined objective figures in the MSSD.

The MSSD's objective is to improve energy efficiency, so the ratios should be evolving towards a figure of one. For example, if there are zero losses in energy transport and distribution, the final consumption figure is equal to the final offer; so the ratio is one.

Methodological indications:

The following definitions of this indicator's components are illustrated in the report entitled « *Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005* » :

Fossil fuel efficiency for electricity generation : Significant improvements in the average efficiency of thermal power plants result from fuel switching; the commissioning of new, high efficiency generating plants; and the decommissioning of older, inefficient plants. In particular, a move from coal towards gas, a fuel used in high-efficiency combined gas-steam cycle, usually incurs higher efficiency gains.

The indicator can be developed separately for oil-, gas- and coal-based generation to isolate the fuel switching effect.

Electricity transmission and distribution efficiency. Electric power transmission and distribution losses include losses during transmission between sources of supply and points of distribution and during the distribution to consumers, including pilferage.

- Mandatory data:

Data on the efficiency of energy conversion and distribution are not readily available for some countries.

The amount of energy produced, supplied and used can be derived from the energy statistics and balances published by individual countries or various international or regional organisations. The amounts of all primary energy options, such as fossil fuel, electricity and heat, need to be considered.

Balance of energy production and use; structure of the electricity offer.

Geographical Scope:

NATIONAL LEVEL	CATCHMENT AREAS	MEDITERRANEAN COASTAL AREAS (NUTS 3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

References:

- <http://ghg.unfccc.int/index.html>
- Energy Indicators for Sustainable Development : Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005
- UNEP-Division of Technology, Industry, and Economics
http://www.uneptie.org/energy/tools/ghgin/docs/GHG_Indicator.pdf

Sources of international data:

- Eurostat, International Energy Agency
- World Bank, United Nations, IAEA

Cautions for use:

Methodology annexe:

STRATEGY FIELD	TYPE	MCSD
ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE	PRIORITY INDICATOR	EXCHANGE AND COOPERATION
Number of energy infrastructures in coastal areas	ENE_C04	

Strategic objective:

This indicator does not refer directly to an objective of the MSSD but actions/orientations suggested should result in a limited number of new infrastructures on the coastal zone.

Rationale:

The production, distribution and transport of energy, which are all booming – particularly electricity production, also need heavy infrastructures which have high impact on the environment: built-up land, destruction of the landscape, and of coastal ecosystems.

The evolution of energy demand dictates the number of energy infrastructures needed. Some types of infrastructure have to be installed in coastal areas, but others do not: the site depends on the means chosen to produce energy.

The MSSD's recommendations on demand management and renewable energy reiterate limiting demand growth and increasing energy production elsewhere than in coastal areas, or which would leave less coverage of the land (solar plants, wind farms, individual equipment). In this way, some investments to construct coastal plants could be avoided or delayed to a future time.

Definition:

Number of energy infrastructures (refinery, pipeline, electric network, power plants) located on the Mediterranean coastal regions.

Unit:

Number

Objective and/or target value:

The MSSD contains no specific quoted objective.

The Plan Bleu's alternative scenario (which is described in the Energy Chapter of the book entitled « A Sustainable Future for the Mediterranean ») shows that more rational use of energy (RUE) could avoid the construction of 154 electricity power plants (of 500 MW and 6600 hrs per year) whereas, should current trends continue, it would be necessary to construct 400 additional plants.

Methodological Indications:

Geographical Scope:

NATIONAL LEVEL	CATCHMENT AREAS	MÉDITERRANÉAN COASTAL AREAS (NUTS 3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
			YES		

References:

- Plan Bleu, UNIDO

International data sources:

Cautions for use:

Depending on the type of energy infrastructures, their size and land coverage could be very different and their impact on the environment, as well as its associated risks, can differ strongly.

STRATEGY FIELD ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE	TYPE PRIORITY INDICATOR	CMDD EXCHANGE AND COOPERATION COOPERATION
Final consumer energy price per fuel and per sector	ENE_C05	

Strategic objective:

This indicator refers to the following action/orientation:

Encourage economic actors to adopt sustainable behaviour when considering energy savings.

Rationale:

The use of market signals such as incentive prices sent to users and investors is key to bring about a change in their behaviour, and to incite investments in RE to reach a critical mass.

If a high long-term price were to be set for fossil energies, this would quite simply promote energy savings and lead to research towards alternative types of energy. As an example, the high price per kilowatt imposed on the residential sector brought about fast development in the field of solar water heaters in Cyprus, Israel, and in the Palestinian territories. On the other hand, the low summer pricing in France slows down the development of potential solar energy. The extremely low cost of natural gas in Egypt (2.5 US\$ cents per kilowatt in 2000) is reducing RE development [Cornut, 2001].

Public authorities have a major role to play in bringing about this intended imbalance in relative pricing of different energy types, by putting energy tax benefits and costing in place. They can have direct influence on the behaviour of those involved by fine-tuning the final pricing for each different energy type. The public authorities can purvey a clear pricing message (pricing which would pay attention to both social and environmental short and long term goals) and, could also, for example, impose higher tax rates on energy types which generate high pollution levels.

Prices not including tax provide us with an estimate of the real costs of energy production, transport and distribution. Prices with tax included can reveal a partial picture of a country's energy strategy.

Definition:

The price actually paid by energy end users with and without tax and subsidies, and per fuel type.

Definitions in detail:

Final consumers: households and industry

Fuel types: heavy fuel (industry), light fuel (household), automotive diesel oil (at the pump), unleaded premium (at the pump), electricity (industry and household), natural gas (industry and household), steal coal (industry), electricity (industry and household).

Unit:

Euros, US \$ or local currency.

Objective and/or targeted value:

No specific targeted value is stated.

Methodological indications:

Prices often change according to the different consumer types. This is why household and industry energy pricing should be collected separately.

The indicator should express the true price paid by the user, so it should include regular accrued charges, but not the cost of connecting to the network.

For example: the price of electricity = the price per kilowatt plus the electricity metre rental charge.

The timeframe should be specified for each price range mentioned, as different types of energy are subject to price changes throughout the year. The best date to choose for the pricing would be January 1st each year.

Two pricing levels can be distinguished:

- Prices including all tax – which correspond to the consumers' final price.
- Prices excluding all tax.

Where possible, the subsidies allocated to each type of consumer should be identified.

Mandatory data: energy pricing

Geographical Scope:

NATIONAL LEVEL	CATCHMENT AREAS	MEDITERRANEAN COSTAL REGIONS	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

References:

- Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005

Sources of international data:

- Eurostat
- OCDE
- AIE

Cautions for use:

The high variety of energy products available on the market makes it necessary to assemble numerous types of pricing. This is why we limit the research here to the most symbolic energy products (electricity, gas and premium quality petrol from the pump). This indicator does not thus precisely reflect the situation for each type of user and each kind of energy, but it does however provide an approximate picture of the situation.

High fluctuations can also exist in pricing tariffs for the same kind of energy in different areas within the same country.

Methodology Annexe:

STRATEGY FIELD ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE	TYPE PRIORITY INDICATOR	MCSD EXCHANGE AND COOPERATION COOPERATION
Existing incentive measures and policies for RE and RUE development at national level	ENE_C06	

Strategic objective:

This indicator refers to the following action/orientation:

Inciter Encourage economic actors, local authorities and consumers to adopt sustainable behaviour in matters of energy savings les acteurs économiques, les autorités locales et les consommateurs à adopter des comportements durables en matière d'économie d'énergie, through the use of incentive pricing policies grâce à une politique des prix, à des subventions ciblées targeted subsidies, à des incitations fiscales fiscal incentives et à des campagnes de and public awareness-raising campagne sensibilisation du public soutenues par les ONG supported by NGOs. Encourager les Foster economic mechanisms mécanismes économiques, tels que les certificats d'énergies renouvelables such as renewable energy certificates, et les réglementations visant à promouvoir and regulations aimed at promoting renewable energies les énergies renouvelables.

Rationale:

This indicator's objective is to monitor the set-up of specific incentive tools.

There is a high economical and social return from energy saving and RE areas, but the financial benefits on a micro-economical scale are not visible in the short term, as the additional investment initially required is high compared to that of classical/standard energy production. This is often dissuasive for consumers and investors. As the market is only capable of viewing this area with short-term vision, intervention by public authorities with long-term vision capabilities is indispensable, particularly as far as the set up of specific incentive measures is concerned.

Definition:

Existing incentive measures in the country: subsidies/donations, repurchase pricing, lower tax on investment and production, no VAT, net metering, RE certificates, specific legislation, political objectives, funding for RE or RUE....

More detail on specific measures is provided in the following methodology indicators section.

This list should be filled in according to the measures already in place in the country.

Unit:

Yes/No

Objective and/or targeted values:

No set quoted objective.

Methodological indications:

Specific legislation for RUE and/or RE: these could include building insulation laws, energy consumption display

Incentive measures for local scale actions (cities, regions...)

Capital subsidies or consumer grants. One-time payments by the government or utility to cover a percentage of the capital cost of an investment, such as a solar hot water system or rooftop solar PV system.

Feed-in tariff. A policy that sets a fixed price at which power producers can sell renewable power into the electric power network. Some policies provide a fixed tariff while others provide fixed premiums added to market- or cost related tariffs. Some provide both.

Investment tax credit. Allows investments in renewable energy to be fully or partially deducted from tax obligations or income.

Net metering. Allows a two-way flow of electricity between the electricity distribution grid and customers with their own generation. When instantaneous consumption exceeds self-generation, the meter runs forward. When instantaneous self-generation exceeds consumption, the meter runs backward and power flows to the grid. The customer pays for the net electricity used in each billing period and may be allowed to carry over net generation from month to month.

Production tax credit. Provides the investor or owner of qualifying property with an annual tax credit based on the amount of electricity generated by that facility.

Renewable portfolio standard (RPS). A standard requiring that a minimum percentage of generation sold or capacity installed be provided by renewable energy. Obligated utilities are required to ensure that the target is met, either through their generation, power purchase from other producers, or direct sales from third parties to the utility's customers.

Renewable energy target. A commitment, plan, or goal by a country to achieve a certain level of renewable energy by a future date. Some targets are legislated while others are set by regulatory agencies or ministries. Can take many forms with varying degrees of enforcement leverage. Also called "planning targets," "development plans," and "obligations."

Tradable renewable energy certificates. Each certificate represents the certified generation of one unit of renewable energy (typically one MWh). These certificates allow trading of renewable energy obligations among consumers and/or producers, and in some markets like the United States allow anyone to purchase separately the green power "attributes" of renewable energy.

Renewable energy funds. Investment fund set up by states or regions and directly used for financing RE/RUE investments, usable at low interest rates or easing the implementation of research, education programmes. fonds d'investissement mis en place par les états ou les régions directement utilisés pour le financement des investissements en ER/URE, utilisables à des taux d'intérêt bas ou facilitant la mise en œuvre de programme de recherche, d'éducation...

Source of definitions: Renewable 2005, Global status report

Geographical scope:

NATIONAL LEVEL	CATCHMENT AREAS	MEDITERRANEAN COSTAL REGIONS (NUTS 3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

RéférencesReferences :

- <http://cdm.unfccc.int/>
- Renewable Policy Energy network: <http://www.ren21.net/default.asp>

Sources de données internationalesInternational Data Sources:

- Renewable Policy Energy network: <http://www.ren21.net/default.asp>

Précautions d'emploi Cautions for use:

Care must be taken when comparing two countries, as tools (e.g. repurchase pricing) differ from one country to another. Les comparaisons entre les pays doivent être effectuées avec précaution car les outils (par exemple tarifs de rachat) peuvent prendre des formes très différentes selon les pays. Besides, their presence in a country does not systematically imply high utilisation.

Also, when assessing results obtain setting up En outre leur existence ne sous entend pas systématiquement une utilisation importante. a certain tool, one has to keep in mind that other factors, such as the price of oil, can influence behaviour.

Annexe méthodologique Methodological Indications:

DOMAINE DE LA STRATÉGIE STRATEGY FIELD ASSURER ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	TYPE INDICATEUR PRIORITY PRIORITAIRE INDICATOR	CMMDCSD EXCHANGE ET AND COOPERATION COOPERATION
Villes/Cities/régions/regions/provinces ayant menées un with an existing energy audit énergétique et and/ou or un a carbon audit carbone et and/ou or avec des with objectifs objectives en in terme terms d'ER et d'URE of RE and RUE	ENE_C07	

Objectif stratégique/Strategic Objective à suivre :

This indicator refers to the following action/orientation:

Inciter/Encourage economic actors, local authorities and consumers to adopt sustainable behaviour in matters of energy saving/les acteurs économiques, les autorités locales et les consommateurs à adopter des comportements durables en matière d'économie d'énergie, through the use of incentive pricing policies/grâce à une politique des prix, à des subventions ciblées/targeted subsidies, à des incitations fiscales/fiscal incentives et à des campagnes de and public awareness-raising campaign/sensibilisation du public soutenues par les ONG/supported by NGOs. Encourager les/Foster economic mechanisms mécanismes économiques, tels que les certificats d'énergies renouvelables/such as renewable energy certificates, et les réglementations visant à promouvoir and regulations aimed at promoting renewable energies les énergies renouvelables.

Justification du choix/Rationale:

Il est reconnu que/it is an accepted fact that policy les actions de politique au niveau/at a local scale are key to the implementation of the sustainable development strategy. Urban areas constitute the main centres of energy consumption. sont une clef de la mise en œuvre d'une stratégie de développement durable. Les villes sont les principaux centres de consommation d'énergie. In order to rationalise energy demand and control greenhouse gas emissions (GHG), Afin de rationaliser les demandes en énergie et de maîtriser les émissions de GES/the first measures to be carried out are the setting up of energy consumption analysis, les premières démarches à effectuer sont d'analyser la consommation d'énergie (energy auditing/audit énergétique) et la and CO₂ emission structure studies/des émissions de CO₂ audit carbone),(carbon auditing) since CO₂ is the main GHG/principal gaz à effet de serre, and then goals for the future at a local level can be determined. puis de se fixer des objectifs pour le futur au niveau local.

Définition :/Definition:

- Cities with more than 30 000 people/Villes de plus de 30 000 habitants, provinces, régions/regions, départements/departments:
 - engagés/committed cities or those having already carried out carbon auditing, energy auditing and/ou ayant réalisés des audit carbone, des audits énergétiques et
 - endowed with quantitative objectives in terms of RE, CO₂ emission/abatement dotés d'objectifs chiffrés en terme d'ER, de réduction d'émissions de CO₂
 - dotés de/equipped with specific policies to grant the development of solar photovoltaic and thermic energy and urban planning/pilot projects/politiques spécifiques pour le développement des énergies solaires thermiques et photovoltaïque et de planification urbaine/projets pilote...

Unité/Unit:

Nom de la ville/Name of the city, région/region, département/department

Accrued number etand % du nombreof the total de villesnumber of cities, régionsregions, départementsdepartments

Objectif et/ou valeur cible Objective and/or targeted values:

Non spécifiéNot indicated

Methodological IndicationsIndications méthodologiques :

Geographical scopeCouverture géographique :

NIVEAU NATIONAL LEVEL	CATCHMENT AREASBASSIN VERSANTS	COMMUNES, DÉPARTEMENTS DEPARTMENTS, RÉGIONSREGIONS,	ZONE LITTORALECOASTAL AREAS	SITES MÉDITERRANÉENS MEDITERRANEAN SITES	MARINE ZONES MARINESAREAS
		OUIYES			

RéférencesReferences:

- <http://cdm.unfccc.int/>
- Renewable 2005 – Global Status Report – REN 21

Sources de données internationalesInternational Data Sources:

- Renewable Policy Energy network : <http://www.ren21.net/default.asp>

Précautions d'emploi Cautions for use:

Methodology Annexe:

DOMAINE DE LA STRATÉGIE/STRATEGY FIELD ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE/ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	TYPE PRIORITY INDICATOR/INDICATEUR PRIORITAIRE	MCS D EXCHANGE AND COOPERATION COOPERATION
Expenditures Dépenses dans les ER et l'URE in RE and RUE: RE and RUE Part des ER et des programmes d'URE share in energy investments and dans les investissements énergétiques et dans les Dépenses de R&D expenses	SMDD ENE_08	

Objectif stratégique/Strategic Objective à suivre :

This indicator refers to the following action/orientation:

Rationaliser et réorienter/redirect les dépenses publiques des gouvernemental public expenditure et promouvoir/promote « green » measures, enforce the l'application de procédures "écologiques" de awarding of public markets passation des marchés publics pour une meilleure cohérence/where better consistency with the objectives proposed by the Strategy is proposed avec les objectifs proposés par la Stratégie. Systématiser les études/Generalise cost-benefit surveys coût-bénéfice, while giving due consideration to environmental and social dimensions/en y incluant une dimension environnementale et sociale. Institutionnaliser et entreprendre des and undertake évaluations d'impact sur on l'environnement assessment, especially before implementing any major public investment particulièrement avant de mettre en oeuvre tout grand programmes d'investissement public.

Justification du choix/Rationale:

Dans le domaine de l'accès à l'énergie/In the field of access to energy, d'importants efforts still remain to be made in many SEMC in view of the increase in demand and the gap to be closed in the equipment sector/restent à accomplir dans de nombreux PSEM compte tenu de la croissance de la demande et des retards d'équipement à combler. A relevant proportion of needs may be covered via the use of RE and energy savings, especially regarding access to electricity/Une part importante des besoins peut être couverte par l'utilisation d'ER et les économies d'énergie, en particulier pour l'accès à l'électricité.

Today/La R&D aujourd'hui détermine R&D determines a country's les capacités future capacities for RE and RUE fields/du pays dans les domaines d'ER et d'URE.

Définition/Definition:

Double l'indicateur double :

Share des énergies renouvelables (ER)/of renewable energy (RE) et des programmes d'efficacité énergétique/and energy efficiency programmes (EE) in total energy investments of a country (private and public sectors) and investments in the electricity sector/dans les investissements énergétiques totaux du pays (privés et publics) et dans les investissements dans le secteur de l'électricité.

Share of renewable energy (RE) and energy efficiency programmes (EE) in the total expenditure of R&D a country (private and public sectors).

Unité/Unit:

%.

Objectif et/ou valeur cible/Objective and/or targeted values:

No target objective/Pas d'objectif cible.

Les The MSSD objectives et and orientations de la SMDD laisse penser/deduce that an increase in RE and RUE expenses could occur and that the weight of investments in non-renewable energy

should decrease. qu'une hausse des dépenses en ER et URE devrait être observée et que le poids des investissements dans les énergies non renouvelables devrait diminuer.

Methodological Indications/Indications méthodologiques :

Couverture géographique :Geographical scope:

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN ZONES (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

Références/References:

Sources de données internationales/International Data Sources:

- Agence Internationale de l'Energie
- Eurostat

Précautions d'emploi/Cautions for use:

DOMAINE DE LA STRATÉGIE/STRATEGY FIELD	TYPE	MCS D
ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE/ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	PRIORITY INDICATOR/INDICATEUR PRIORITAIRE	EXCHANGE AND COOPERATION COOPERATION
Official development assistance share in the energy field devoted to RE and RUE/Part de l'aide publique au développement dans le secteur énergétique dédiée aux ER et à l'URE	ENE_C09	

Objectif stratégique/Strategic Objective à suivre :

This indicator refers to the following action/orientation:

Inciter les acteurs économiques/Encourage donors to integrate sustainable development in their strategies and methods. Increase substantially the relative aid share contributing to the Strategy. Promote the funding of decentralised development programmes in particular those involving MEDA funds.

Justification du choix/Rationale:

This indicator is designed to measure, Cet indicateur vise à mesurer, pour les pays de la région in the countries of the region, whether the si les volumes of aid d'aide offerts ou reçus/granted or received for RE and RUE get bigger, and therefore if the aid is turning towards the funding of actions that contribute to achieving the objectives of the MSSD in that framework. destinés aux ER et à l'URE augmentent et donc si l'aide s'oriente vers le financement d'actions contribuant à atteindre les objectifs de la SMDD dans le domaine.

The implementation of the Strategy requires significant public financing in the scope of projects aimed at decreasing environmental problems, La mise en œuvre de la Stratégie nécessite d'importants financements publics pour les projets visant à réduire les problèmes environnementaux, améliorer l'accès/improving access aux services de base/basic services, promouvoir la recherche et le développement/promoting research and development, instaurer des systèmes/setting up sustainable transport durables/systems, fostering a change in consumption and production patterns, inciter à une évolution des modes de consommation et de production renforcer les/strengthening capacités/capacities, et favoriser and promoting sustainable agricultural and un développement agricole et rural durable/development. However, the scope for funding is very limited for most of the Southern- and Eastern-rim Mediterranean countries. Or, la plupart des pays méditerranéens de la rive Sud et Est ont des marges de manœuvre financière très limitées.

If the official development assistance finances projects complying with the objectives of the MSSD, it can dynamise the region's development significantly, while helping it achieve progress towards the objectives of the MSSD. L'aide publique au développement

Définition :/Definition:

The official development assistance share (in %) in the energy field – offered (donor countries) or received (beneficiaries countries) – devoted to RE and RUE./Part de l'aide publique au développement dans le secteur énergétique - offerte (pour les pays donateurs) ou reçue (pour les pays bénéficiaires) – dédiée aux ER et à l'URE en %

Unité/Unit:

%

Objectif et/ou valeur cible /Objective and/or targeted values:

Néant/None.

Methodology indications:

Couverture géographique : Geographical scope:

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN ZONES (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

Références/References:

- Plan Bleu Report « A Sustainable Future for the Mediterranean », p 139, figure 2.5 and table 2.3.

Sources de données internationales/International Data Sources:

- OCDE – CAD; detailed file.

Précautions d'emploi/Cautions for use:

Annexe méthodologique

Codes and classifications in the OECD SPSC detailed database are as follow (the last 2 columns include the codification used by Plan Bleu):

OECD Codes and descriptions				Plan Bleu codes	
DAC 5 CODE	CRS CODE	DESCRIPTION	Clarifications / Additional notes on coverage	Fields RUE / RE	Fields codes
230		ENERGY GENERATION AND SUPPLY			0
	23010	Energy policy and administrative management	Energy sector policy, planning and programmes; aid to energy ministries; institution capacity building and advice; unspecified energy activities including energy conservation.	RUE	1
	23020	Power generation/non-renewable sources	Thermal power plants including when heat source cannot be determined; combined gas-coal power plants.		0
	23030	Power generation/renewable sources	Including policy, planning, development programmes, surveys and incentives. Fuelwood/charcoal production should be included under forestry (31261).	RE	2
	23040	Electrical transmission/distribution	Distribution from power source to end user; transmission lines.		1
	23050	Gas distribution.	Delivery for use by ultimate consumer.		1
	23061	Oil-fired power plants	Including diesel power plants.		0
	23062	Gas-fired power plants			0
	23063	Coal-fired power plants			0
	23064	Nuclear power plants	Including nuclear safety.		0
	23065	Hydro-electric power plants	Including power-generating river barges.		0
	23066	Geothermal energy		RE	2
	23067	Solar energy	Including photo-voltaic cells, solar thermal applications and solar heating.	RE	2
	23068	Wind power	Wind energy for water lifting and electric power generation.	RE	2
	23069	Ocean power	Including ocean thermal energy conversion, tidal and wave power.	RE	2
	23070	Biomass	Densification technologies and use of biomass for direct power generation including biogas, gas obtained from sugar cane and other plant residues, anaerobic digesters.	RE	2

	23081	Energy education/training	Applies to all energy sub-sectors; all levels of training.	RUE	1
	23082	Energy research	Including general inventories, surveys.	RUE	1

DOMAINE DE LA STRATÉGIE STRATEGY FIELD ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	TYPE PRIORITY INDICATOR INDICATEUR PRIORITAIRE	MCSD EXCHANGE AND COOPERATION COOPERATION
Share of the population with no access to electrification Part de la population n'ayant pas accès à l'électrification	ENE_C10	

Objectif stratégique Strategic Objective à suivre :

Increasing access to electricity in the concerned rural areas. Accroître l'accès à l'électricité dans les zones rurales concernées.

Supporting projects and investments concerned with electricity access. Soutenir les projets et les investissements en matière d'accès à l'électricité.

Justification du choix Rationale:

L'accès à l'énergie Access to energy (en particulier électrique especially electric) est crucial est vital for household daily life in domestic, sanitary, medical, education and access to information terms. pour la vie quotidienne des ménages en terme ménager, sanitaire, médicale, d'éducation et d'accès à l'information. Lack of access to modern energy Le manque d'accès aux services modernes d'énergie contributes to poverty and restricts economic development. à la pauvreté et limite le développement économique.

The number of people with no access to electricity has been estimated at 16 million in the Mediterranean, in 2000. En Méditerranée, en 2000, on estime qu'environ 16 millions de personnes n'ont pas accès à l'électricité.

Définition : Definition:

Part de la The share of the population (ou des ménages or households) with no access to electrification n'ayant pas accès à l'électrification for the whole country and for the rural areas compared to the total population and the rural population pour l'ensemble du pays et pour les zones rurales dans la population totale et dans la population rurale.

Dans cet indicateur In the case of this indicator, access to electricity including l'accès à l'électricité inclus l'électrification electrification par raccordement au réseau national via a connection to the national network and access to electricity through a decentralised mode of et l'accès à l'électricité par un mode décentralisé d'électrification (ex : e.g. small networks supplied with wind energy or small hydraulic or private photovoltaic solar energy mini réseaux alimentés par l'éolien ou l'hydraulique ou systèmes photovoltaïques individuels...).

Unité Unit:

En % de la of the total population totale

En % de la of the rural population rurale

Objectif et/ou valeur cible Objective and/or targeted values:

The MSSD includes a desirable objective: La SMDD inclut un objectif souhaitable :

Un A desirable objective would be the halving the proportion of the populations with no access in the developing countries by 2015 (compared to 1990). objectif souhaitable serait de réduire de moitié, d'ici 2015 (comparé à 1990), la part des populations des pays en développement n'y ayant pas accès

Annexe méthodologique Methodological Indications:

Les The most important sources de données nationales of national data for this type of information are the les plus importantes pour ce type de données sont les « Enquêtes ménages » (Household surveys).

Couverture géographique : Geographical scope

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN REGIONS (NUTS3)	COASTAL AREA	MEDITERRANEAN SITES	MARINE AREAS	RURAL AREAS
YES						YES

RéférencesReferences:

- Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005

Sources de données internationalesInternational Data Sources:

- ⇒ UNICEF
- ⇒ International energy Agency

Précautions d'emploi Cautions for use:

DOMAINE DE LA STRATÉGIESTRATEGY FIELD	TYPE	MCSD
ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGEASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	PRIORITY INDICATORIN DICATEUR PRIORITAIRE	EXCHANGE AND COOPERATION COOPERATION
Share of fuel and electricity expenditures in household Part des dépenses en fioul et électricité dans le budgets des ménages	ENE_C11	

Objectif stratégiqueStrategic Objectiveà suivre :

This indicator refers to the following action/orientation:

Inciter les acteurs économiquesEncourage economic actors, local authorities and consumers, to adopt sustainable behaviour as regards energy saving, thanks to pricing policies, targeted subsidies, incentive taxation, les autorités locales et les consommateurs à adopter des comportements durables en matière d'économie d'énergie, grâce à une politique des prix, à des subventions ciblées, à des incitations fiscales and to public awareness-raising campaigns supported by NGOs et à des campagnes de sensibilisation du public soutenues par les ONG.

Support projects and investments related to electricity access.Soutenir les projets et les investissements en matière d'accès à l'électricité.

Justification du choix Rationale:

As regards sustainable development, it is important to examine energy access from a financial point of view. D'un point de vue du développement durable, il est important d'examiner la possibilité d'accès à l'énergie en terme financier.

The income level per inhabitant is insufficient as an indicator when considering the financial possibilities of energy access. Le niveau de revenu par habitant n'est pas un indicateur suffisant pour examiner les possibilités d'accès financiers à l'énergie. Indeed, it is possible that within a country where the income per inhabitant is high or intermediate, the range of the poorest population cannot afford access to commercial energyEn effet, il est possible que dans un pays où le revenu par habitant est élevé ou intermédiaire, la tranche de la population la plus pauvre n'est pas les moyens financiers d'accéder à l'énergie commerciale. In this case, for the lowest income group, it is vital to reduce the financial energy obstacle. Il existe alors dans ce cas un besoin de diminuer la charge financière relative à l'énergie pour les tranches de revenu les plus bas.

Therefore, pricing operating systems should be set up per social group in order to reconcile objectives that could appear contradictory:Il s'agira alors d'inventer des systèmes opérationnels de tarification par tranche sociale pour concilier des objectifs qui peuvent paraître contradictoire : energy available

to the poorest people (therefore cheaper) and energy sufficiently expensive to foster its rational use and integrate negative externalities. énergie accessible au plus pauvre (donc peu chère) et énergie suffisamment chère pour inciter à son utilisation rationnelle et intégrer les externalités négatives.

Définition :Definition:

Average share of household's income spent on fuel and electricity.

Average share of the income of the 20% of the population with the lowest income, spent on fuel and electricity. Part du revenu disponible des ménages dépensé en fioul et électricité en moyenne et pour les 20% de la population avec les revenus les plus bas.

UnitéUnit:

%

Objectif et/ou valeur cible Objective and/or targeted values:

NéantNone.

Methodological IndicationsIndications méthodologiques :

Formule de calculCalculation formula:

(Total of the household's expenses in commercial energy/total household's available income des dépenses des ménages en énergie commerciale/revenu total disponible des ménages) * 100

Même formule à utiliserSame formula for the 20% of the population with the lowest income pour les 20% de la population avec le niveau de revenu le plus faible.

In cases where energy expenses figures are not available, they can be estimated by multiplying the total of the energy used by the related fuel price (referring here to a set date). Si les chiffres de dépense en énergie ne sont pas disponibles, ils peuvent être estimés en multipliant le total de l'énergie consommé par le prix du fioul correspondant (en se référant à une date fixe).

Source des donnéesof information: Enquêtes ménagesHousehold surveys

Couverture géographique :Geographical scope

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN AREAS (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

RéférencesReferences:

- Energy Indicators for Sustainable Development : Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005

Sources de données internationalesInternational Data Sources:

World Bank WDI

UNICEF - household surveys

Eurostat

OCDE

International Energy Agency

Précautions d'emploi Cautions for use:

It is hard to estimate the acceptable/sustainable level or ideal level of household income spent on energy.

Also, this indicator only refers to commercial energy, even where non-commercial energy is still used significantly in several countries. Il reste difficile d'estimer quel est le niveau raisonnable/soutenable ou idéal du revenu des ménages dépensé en énergie.

Annexe méthodologique Methodology annexe:

<p style="text-align: center;">DOMAINE DE LA STRATÉGIE/STRATEGY FIELD</p> <p>ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER</p>	<p style="text-align: center;">TYPE</p> <p style="text-align: center;">PRIORITY INDICATOR/IN DICATEUR PRIORITAIRE</p>	<p style="text-align: center;">MCSD</p> <p style="text-align: center;">EXCHANGE AND COOPERATION</p>
<p>Job creation through the development of renewable energies and rational use of energy Emplois générés par le développement des énergies renouvelables et l'utilisation rationnelle de l'énergie</p>	<p>ENE_C12</p>	

Strategic Objective/Objetif stratégique à suivre :

This indicator does not meet a precise strategic objective, but the MSSD/ "Energy" chapter clearly mentions potential job creation in the RE and RUE activities. Cet indicateur ne répond pas à un objectif stratégique défini ; mais la SMDD / Chapitre « Energie » affiche comme résultat de sa mise en œuvre, la création d'emplois.

Justification du choix Rationale:

One of the Un des arguments used to promote RE and RUE development is the potential direct job creation in innovative sectors. utilisés pour promouvoir le développement des ER et de l'URE est la création potentiel d'emplois directs dans des secteurs innovants

For all the Mediterranean countries where the unemployment rate (in particular for the under 25s) is the highest in the world, the development of these two sectors can help create numerous jobs and thus curb unemployment. Pour l'ensemble des pays méditerranéens où les taux de chômage (en particulier des moins de 25 ans) est le plus élevé du monde, le développement de ces deux secteurs peut aider à créer les nombreux emplois nécessaires pour résorber le chômage.

Définition :Definition:

Total des emplois/ of employment directly connected to renewable energies directement liés aux énergies renouvelables (éolien/wind, solar, geo-thermal, biomass, hydro, énergies, solaire, géothermie, biomasse, hydro) and to activities relating to the rational use of energy ; the latter can include those in the industry for the production of RE and RUE equipment, plus implementation and maintenance. et aux activités relatives à l'utilisation rationnelle de l'énergie dans l'industrie, la mise en œuvre et la maintenance.

Unité/Unit:

milliers/Thousands

Objectif et/ou valeur cible Objective and/or targeted values:

Néant/None

Methodological Indications/Indications méthodologiques :

Couverture géographique :Geographical scope

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN AREAS (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

Références/References:

Sources de données internationales/International Data Sources:

Précautions d'emploi Cautions for use:

Methodology Annexe:

DOMAINE DE LA STRATÉGIE STRATEGY FIELD	TYPE	MCSD
ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER	PRIORITY INDICATOR IN DICATEUR PRIORITAIRE	EXCHANGE AND COOPERATION COOPERATION
Frequency of ozone peak en provenance des systèmes énergétiques	ENE_C13	

Objectif stratégique Strategic Objective à suivre :

This indicator does not refer to any precise strategic objective. Cet indicateur ne se réfère à aucun objectif stratégique défini. Mais, les objectifs et orientations de la SMDD of the MSSD should allow abatement of air pollutant emissions responsible for local pollution. Cela devrait permettre une réduction des émissions de polluants atmosphériques responsables de pollution locales.

Justification du choix Rationale:

Energy development complying with the Un développement énergétique conforme aux orientations de la SMDD of the MSSD would lead to the expected reduction in a notamment comme effet attendu une réduction des émissions polluantes et, de ce fait une and therefore bring about a reduction in negative impacts on human health generated by energy activities.

When the daily temperature is high (more than 28° C), with no wind and much sun – which is frequently the case in the Mediterranean – certain types of pollutant (called ozone precursors) are converted to ozone, a type of gas with a negative impact on human health.

Ozone gas precursors are emitted to a great extent by energy activities. Mainly COV and NOx are emitted when fossil fuels are consumed.

When the concentration of ozone is more than 150 micro grams per cubic meter, impacts on health can include: irritation of lungs and eyes, lower resistance to respiratory infections, and acute respiratory disease.

Ozone pollution is responsible for as many as 20 000 deaths in Europe every year (source: AEE).

Unité Definition:

- Number of days per year where the ozone level is above the threshold level of 180 µg/m³
- Number of days per year where the ozone level is above the threshold level of 240 µg/m³ (European Union alert level)

Unité Unit:

Number of days

Objectif et/ou valeur cible Objective and/or targeted values:

Pas d'objectif dans la SMDD No objective in the MSSD.

Indications méthodologiques Methodological indications:

The statistics involve each ozone monitoring station in the country.

This has to do with accounting for each station, and the number of days that have undergone peak pollution (at least exceeding recommended levels).

In the absence of national standards, the two following thresholds will be taken

- An average over one hour in excess of 180 µg/m³, which is the population information threshold in Europe (EEC Directive 92/72).
- An average over one hour in excess of 240 µg/m³, which is the alarm level.

Ozone has been selected for tracking because of its ability to reflect air pollution at a low cost.

Couverture géographique :Geographical scope

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN AREAS (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

RéférencesReferences:

- Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005
- Convention on Long-range Transboundary Air Pollution (CLRTAP)

Sources de données internationalesInternational Data Sources:

Eurostat

European Environment Agency

Ministry of Environment or Health

Surveillance network of cities

Prerequisite criteria for indicator calculation are contained, at least partially, in the Eurostat/OCDE questionnaire on environment which can also provide additional methodology information. These calculation elements are also partly collected within the MEDSTAT Environment project.

Précisions d'emploi for use:

This indicator is linked both to air pollutant emission and to meteorological conditions.

When levels of ozone and other air pollutants, such as nitrogen oxides (NOx) and particulate matter are high, they can combine to form harmful smog. However, the highest concentrations of ozone are not always found in city centres where the pollutants that form ozone are usually emitted. This is because an abundance of nitrogen oxide from traffic often suppresses ozone formation. As ozone may be transported by the wind over distances of 400-500 km a day, the ozone incident may actually occur in suburban and rural areas far away from the source of the pollutants (source: EEA).

Methodology annexe:

<p style="text-align: center;">DOMAINE DE LA STRATÉGIE STRATEGY FIELD</p> <p>ENSURING SUSTAINABLE MANAGEMENT OF ENERGY AND MITIGATING OF AND ADAPTING TO THE EFFECTS OF CLIMATE CHANGE ASSURER UNE GESTION DURABLE DE L'ÉNERGIE, ATTÉNUER LES EFFETS DU CHANGEMENT CLIMATIQUE ET S'Y ADAPTER</p>	<p style="text-align: center;">TYPE</p> <p style="text-align: center;">PRIORITY INDICATOR INDICATEUR PRIORITAIRE</p>	<p style="text-align: center;">MCS D</p> <p style="text-align: center;">EXCHANGE AND COOPERATION COOPERATION</p>
<p>Energy use per capita en provenance des systèmes énergétiques</p>	<p style="text-align: center;">ENE_C14</p>	

Objectif stratégique Strategic Objective à suivre :

This indicator does not refer to any precise strategic objective. Cet indicateur ne se réfère à aucun objectif stratégique défini. Mais, les However, the objectives et and orientations de la SMDD of the MSSD should allow a certain reduction of the gap observed between the northern and southern rim countries. In the North the energy use per capita should stabilize (or even decrease) and in the South the increase of the energy use should be moderate.

Justification du choix Rationale:

Disparities of the amount of energy use per capita between northern and southern Mediterranean countries is very high. One objective of the MSSD is to reduce this disparities. This indicator aims at completing the one related to energy access. Due to the increase of the population and the evolution of the way of life, the total energy used in the Mediterranean basin will increase in the future, in particular in the South. The energy use per capita allows a better comparison of countries and a better observation of convergences.

Unité Definition:

- Energy use refers to use of primary energy before transformation to other end-use fuels, which is equal to indigenous production plus imports and stock changes, minus exports and fuel supplied to ships and aircraft engaged in international transport (source: World Bank, WDI 2006)

Unité Unit:

Kg of oil equivalent per capita

Objectif et/ou valeur cible Objective and/or targeted values:

Pas d'objectif dans la SMDD No objective in the MSSD.

Indications méthodologiques Methodological indications: Couverture géographique : Geographical scope

NATIONAL LEVEL	CATCHMENT AREAS	COASTAL MEDITERRANEAN AREAS (NUTS3)	COASTAL AREAS	MEDITERRANEAN SITES	MARINE AREAS
YES					

Références References:

- Energy Indicators for Sustainable Development: Guidelines and Methodologies – IEA, UNDESA, IEA, Eurostat 2005

Sources de données internationales International Data Sources:

European Environment Agency

World Bank, World Development Indicators

Préc Cautions d'emploi for use:

Methodology annexe: