

EU Emissions Trading Scheme  
Directive 2003/87/EC

**NATIONAL ALLOCATION PLAN FOR MALTA**

**2008 - 2012**

**AS REVISED PURSUANT TO:  
COMMISSION DECISION OF 29<sup>TH</sup> NOVEMBER 2006 CONCERNING THE  
NATIONAL ALLOCATION PLAN FOR THE ALLOCATION OF  
GREENHOUSE GAS EMISSION ALLOWANCES NOTIFIED BY MALTA IN  
ACCORDANCE WITH DIRECTIVE 2003/87/EC OF THE EUROPEAN  
PARLIAMENT AND OF THE COUNCIL.**

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## INTRODUCTION

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### *This National Allocation Plan (NAP)*

This National Allocation Plan (NAP) for Malta is prepared pursuant to obligations under Directive 2003/87/EC<sup>1</sup>, which establishes an emissions trading scheme (ETS) for greenhouse gas (GHG) emissions within the European Union (EU). All Member States prepared a first NAP to cover emissions trading to be undertaken in the EU for the three-year period from January 2005 to December 2007. They are now required to prepare a second NAP for the five-year period from January 2008 to December 2012. Further guidance on the preparation of NAPs for this second trading period has been provided in a Communication from the Commission (COM(2005)703 final<sup>2</sup>).

The European Community undertook to cut its overall greenhouse gas emissions by 8% of 1990 levels over the first Kyoto Protocol (KP) commitment period (2008-2012). In 2002, a burden sharing agreement was agreed by the (then) EU-15 Member States which allocated specific reduction targets to individual Member States, thus ensuring that the overall reduction target was met. Respective emission levels were set for each Member State<sup>3</sup>. The ETS is one of the measures implemented by the EU to achieve its overall objective.

This National Allocation Plan (NAP) has been prepared by the Malta Environment and Planning Authority (MEPA), with the assistance of Enviro-Markets International (UK) on behalf of the Government of Malta. The NAP has been approved by the Minister for Rural Affairs and the Environment, who oversees Malta Environment and Planning Authority (MEPA), and endorsed by the Cabinet. As required under the Directive, the NAP has been the subject of an extensive consultation process involving both direct stakeholders and the general public.

However, the NAP remains a draft until formally approved by the European Commission (EC). After its submission, each National Allocation Plan is considered by the Commission. The criteria set by the EC to evaluate the NAPs from all Member States are identified in Box 1. The Commission may reject any aspect of any plan on the basis that it is incompatible with the Directive, giving reasons, and may propose amendments.

Once accepted by the European Commission, Malta's National Allocation Plan will form the basis for the final decisions to be made on the total quantity of allowances to be issued and their distribution to installations subject to the EU ETS under Article 11 of the Directive for the second trading period from January 2008 to December 2012.

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<sup>1</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC. OJ L275, 25.10.2003, pg. 32.

<sup>2</sup> COM(2005) 703 final Communication from the Commission "Further guidance on allocation plans for the 2008 to 2012 trading period of the EU Emission Trading Scheme".

<sup>3</sup> Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder. OJ L130, 15.5.2002, pg.1.

***Box 1 : Criteria to be Used by the EC to Evaluate NAPs***

1. The total quantity of allowances to be allocated for the relevant period shall be consistent with the Member State's obligation to limit its emissions pursuant to Decision 2002/358/EC and the Kyoto Protocol, taking into account, on the one hand, the proportion of overall emissions that these allowances represent in comparison with emissions from sources not covered by this Directive and, on the other hand, national energy policies, and should be consistent with the national climate change programme. The total quantity of allowances to be allocated shall not be more than is likely to be needed for the strict application of the criteria of this Annex. Prior to 2008, the quantity shall be consistent with a path towards achieving or over-achieving each Member State's target under Decision 2002/358/ EC and the Kyoto Protocol.
2. The total quantity of allowances to be allocated shall be consistent with assessments of actual and projected progress towards fulfilling the Member States' contributions to the Community's commitments made pursuant to Decision 93/389/EEC<sup>4</sup>.
3. Quantities of allowances to be allocated shall be consistent with the potential, including the technological potential, of activities covered by this scheme to reduce emissions. Member States may base their distribution of allowances on average emissions of greenhouse gases by product in each activity and achievable progress in each activity.
4. The plan shall be consistent with other Community legislative and policy instruments. Account should be taken of unavoidable increases in emissions resulting from new legislative requirements.
5. The plan shall not discriminate between companies or sectors in such a way as to unduly favor certain undertakings or activities in accordance with the requirements of the Treaty, in particular Articles 87 and 88 thereof.
6. The plan shall contain information on the manner in which new entrants will be able to begin participating in the Community scheme in the Member State concerned.
7. The plan may accommodate early action and shall contain information on the manner in which early action is taken into account. Benchmarks derived from reference documents concerning the best available technologies may be employed by Member States in developing their National Allocation Plans, and these benchmarks can incorporate an element of accommodating early action.
8. The plan shall contain information on the manner in which clean technology, including energy efficient technologies, are taken into account.
9. The plan shall include provisions for comments to be expressed by the public, and contain information on the arrangements by which due account will be taken of these comments before a decision on the allocation of allowances is taken.
10. The plan shall contain a list of the installations covered by this Directive with the quantities of allowances intended to be allocated to each.
11. The plan may contain information on the manner in which the existence of competition from countries or entities outside the Union will be taken into account.
12. The plan shall specify the maximum amount of CERs and ERUs which may be used by operators in the Community scheme as a percentage of the allocation of the allowances to each installation. The percentage should be consistent with the Member State's supplementary obligations under the Kyoto Protocol and decisions adopted pursuant to the UNFCCC or the Kyoto Protocol.

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<sup>4</sup> Council Decision 93/389/EEC of 24 June 1993 for a monitoring mechanism of Community CO<sub>2</sub> and other greenhouse gas emissions has been repealed by Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.

### *The Commission's Decision on Malta's original NAP proposal*

On 27 September 2006, Malta submitted its second National Allocation Plan to the European Commission. On the basis of its assessment, the Commission issued a Decision on 29 November 2006<sup>5</sup> on this proposed allocation plan requesting that a number of changes be made thus:

- the total quantity to be allocated for the Community scheme is reduced by 0.812539 million tonnes CO<sub>2</sub> equivalent of allowances per year;
- the quantity of allowances allocated to an installation that is listed in the national allocation plan and operating in its territory is not subject to adjustments in the event of partial or temporary closure of an installation;
- an overall maximum amount of CERs and ERUs which may be used by operators in the Community scheme as a percentage of the allocation of the allowances to each installation is specified in the national allocation plan.

This document aims to implement these requirements on the basis of the decision taken by the Government of Malta in line with the Commission's Decision, and supersedes the NAP as submitted by Malta on 27 September 2006.

### *The Special Situation of Malta*

Malta was instrumental in launching and piloting the concept of climate change through international fora. In particular, Malta made a proposal for a resolution at the United Nations General Assembly in 1988 urging the 'protection of global climate for present and future generations of mankind'. This proposal was adopted as resolution 43/53, and was the foundation on which further international developments in this field (including the Kyoto Protocol) were based.

The European Union, representing the 15 pre-May 2004 Member States, is an Annex I signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and an Annex B signatory to its Kyoto Protocol. The Kyoto Protocol (KP) sets quantified targets for reducing greenhouse gas emissions for those signatories that are included in its Annex B. Malta ratified the UNFCCC as a *non-Annex I* party on 17 March 1994, and on the same basis, subsequently ratified the Kyoto Protocol on 11 November 2001.

It follows that Malta has no emission limitation commitments under the KP. Indeed, out of 25 EU Member States, only Malta and Cyprus have no commitments. All the other 23 Member States are individually Annex I Parties to the Convention (Annex B to the Kyoto Protocol), and so have quantified emission limitation commitments. Thus, for the time being, Malta and Cyprus have exceptional status within the EU.

Although Malta does not have any individual reduction limitation commitment, Malta fully supports the European Commission in leading all 25 Member States towards ambitious reductions in greenhouse gas emissions, together with the EU's leading role in the international action on climate change. Also, as a Member State of

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<sup>5</sup> Commission Decision of 29 November 2006 concerning the national allocation plan for the allocation of greenhouse gas emission allowances notified by Malta in accordance with Directive 2003/87/EC of the European Parliament and of the Council.

the European Union, Malta is now bound by the obligations set out in European Union legislation, including the Emissions Trading Directive.

Malta's overall greenhouse gas emissions are very small when compared to those of the European Union as a whole. In fact, Malta's emissions of GHGs in 2002 were just 0.068% of the total EU-15 emissions and 0.058% of the total EU-25 emissions. This reflects the small size of the country in geographical, population and economic terms.

In addition, Malta has one of the lowest emission rates per capita within the EU (7 tonnes of CO<sub>2</sub> equivalent per capita, compared to an average of 11 tonnes for the EU-25). The specific GHG emissions per unit of gross domestic product (GDP) for Malta are 924 tonnes of CO<sub>2</sub> equivalent per million Euro of GDP, as against the EU average of 607 tonnes<sup>6</sup>. However, this reflects more Malta's (relatively low) GDP rather than high emissions *per se*, along with the fact that Malta is too small to benefit from 'economies of scale' (for example, in electricity production) and that it is (at present) an isolated energy system with a limited choice of fuels.

### *Specific Implications for the NAP*

These issues have a number of important implications for Malta's NAP. These relate both to the approach used in preparing the NAP and to the wider implications of the low absolute level of GHG emissions attributable to Malta.

As in the first trading period, there are only two existing installations in Malta which fall within the framework of the ETS set by the Directive. These are the two power stations operated by the state-owned energy-utility, EneMalta, at its Marsa and Delimara sites. At present they have a total nominal installed capacity of 571 MW, with 272 MW at Marsa and 299 MW at Delimara. In 2004 peak maximum demand in both summer and winter was around 390 MW, with a maximum of 387 MW (summer peak)<sup>7</sup>. In 2005 these units produced a total of 2,263,424 MWh of electricity and produced CO<sub>2</sub> emissions totaling 1,983,806 tonnes<sup>8</sup>.

For the first trading period from 2005 to 2007, Malta's NAP was based on these two sites alone (together with a provision for 'new entrants'). Furthermore, projections of electricity demand (and therefore CO<sub>2</sub> emissions from these plants) were based on a 'business as usual' scenario, since (as already noted) Malta has no obligations to reduce its emissions at this time and is a developing economy.

For this second trading period from 2008 to 2012 we have adopted a somewhat different strategic approach. The total quantity of allowances to be allocated during this period is set in accordance with the Commission's Decision referred to above. The distribution of allowances between the installations that have been identified as participants in the scheme during this period is determined by applying the same methodology as originally proposed by Malta, taking due account of the following considerations:

- Projections of (electricity) demand are again based initially on a 'business as usual' model, but with account taken of projections for demand reduction

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<sup>6</sup> EEA Report 8/2005: "Greenhouse Gas Emission Trends and Projections in Europe 2005".

<sup>7</sup> EneMalta Corporation, Annual Report 2004.

<sup>8</sup> EneMalta data 2006, with data for reporting years adjusted to provide data for calendar years.

through energy efficiency measures as Malta continues to move more towards decoupling energy consumption from economic growth;

- Projections of how this demand will be met are still based on the existing Marsa and Delimara units: EneMalta will almost certainly need to cease operating some of the older units at Marsa during this second trading period in order to comply with the Large Combustion Plants Directive, and plans are currently in hand on how to replace this capacity;
- These projections will also take account of the small but increasing contribution of renewable energy, based mainly on known projects in the fields of energy-from-waste, biomass and solar photovoltaic technologies;
- The additional 'single event' allowance that is proposed is based on the need to accommodate new projects that will result in a significant 'step change' in electricity demand. This reflects the process used during the preparation of the NAP for 2005-2007, although we have now sought to demonstrate that the allowance that is proposed is not 'double counting'. Projects are only included where they have not been taken into account in estimates of GDP growth that were used in determining electricity demand trends, or where the impact on GDP is small relative to the increase in electricity demand that is expected. In the longer term the Malta Environment and Planning Authority (MEPA) will seek to ensure that major development projects meet part of their electricity demand through alternative energy sources (including cogeneration) rather than relying wholly on supplies through the EneMalta grid, but this is not yet government policy.

It is already clear that additional generation capacity will be needed during this trading period, and a number of options are under active consideration, but no final decision has yet been taken. These options include not only new generation capacity within (or outside) EneMalta, but also the establishment of an electricity interconnector with Sicily and/or a supply of natural gas or LNG/CNG. Any of these developments would have a significant impact both on EneMalta's operations and on the emissions of CO<sub>2</sub> from the company's installations.

## SUMMARY OF NATIONAL ALLOCATION PLAN

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|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | The Government of Malta is required under Directive 2003/87/EC to prepare a National Allocation Plan to show how it will implement the EU Emissions Trading Scheme during the second Trading Period from January 2008 to December 2012.                                                                                                                                                                                                                           |
| 2  | The Government has determined that allowances totaling 10.715 million tonnes of carbon dioxide (CO <sub>2</sub> ) should be allocated to installations in Malta to cover this second phase of emissions trading.                                                                                                                                                                                                                                                  |
| 3  | At present only one sector (the power generation sector) falls within the scope of the emissions trading scheme, and the total quantity of allowances has been allocated across the two existing installations in this sector over the five year period, taking account of projected growth in electricity consumption including the impact of measures to reduce demand, more efficient electricity generation and the contribution of renewable energy sources. |
| 4  | Separate allocations at installation level have been made to the two sites, taking account of the proportion of the total electricity demand that each makes at present, and of trends for improved efficiency of power generation.                                                                                                                                                                                                                               |
| 5  | No allocation of allowances will be made available up front to 'new entrants' in the power sector or in other sectors covered by the emissions trading scheme, unless the new entrants reserve is replenished through the transfer of allowances from an incumbent installation that undergoes full closure.                                                                                                                                                      |
| 6  | In the absence of any allowances available in the reserve, new entrants will have to purchase the amount of allowances they require.                                                                                                                                                                                                                                                                                                                              |
| 7  | All allocations will be provided free of charge. If any allowances remain in the new entrants reserve by the end of the five year trading period, these will be cancelled.                                                                                                                                                                                                                                                                                        |
| 8  | In the case that any allowances would be available in the reserve for allocation to new entrants, such allocation will be based on the application of Best Available Techniques to minimize greenhouse gas emissions and take account both of the fuel used and of the proposed operating hours for the new installation, in accordance with rules set out under this Plan.                                                                                       |
| 9  | No allowances will be auctioned during this second phase of the scheme. The 'banking' of allocations has not been allowed at the end of the first trading period (December 2007).                                                                                                                                                                                                                                                                                 |
| 10 | A limit on the use of CERs and ERUs by installations is set at a level equivalent to 10% of the respective total allocation for each installation.                                                                                                                                                                                                                                                                                                                |
| 11 | The Government of Malta is implementing a number of other programmes to complement the emissions trading scheme, including programmes to encourage renewable energy and energy efficiency in line with the country's Sustainable Development Strategy. These are expected to further decouple Malta's energy consumption and CO <sub>2</sub> emissions from economic growth.                                                                                      |



## NATIONAL ALLOCATION PLAN FOR MALTA FOR 2008-2012

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Malta's National Allocation Plan for the ETS trading period from January 2008 to December 2012 is presented in the format suggested in the Communication of the Commission COM(2003)830 on guidance to assist Member States in the implementation of the criteria listed in Annex III to Directive 2003/87/EC. This is further amplified by guidance issued in December 2005, namely "Further Guidance on Allocation Plans for the 2008 to 2012 Trading Period of the EU Emission Trading Scheme" (COM(2005)703 final).

### 1. DETERMINATION OF THE TOTAL QUANTITY OF ALLOWANCES

1.1 *What is the Member State's emission limitation or reduction obligation under Decision 2002/358/EC or under the Kyoto Protocol (as applicable)?*

Malta is a signatory to the UNFCCC and has signed and ratified the Kyoto Protocol. However, at present Malta has no legal obligation, either under Decision 2002/358/EC or under the Kyoto Protocol, to limit or reduce its greenhouse gas emissions.

1.2 *What principles, assumptions and data have been applied to determine the contribution of the installations covered by the emissions trading Directive to the Member State's emission limitation or reduction obligation (total and sector historical emissions, total and sector forecast emissions, least-cost approach)? If forecast emissions were used, please describe the methodology and assumptions used to develop the forecasts.*

#### **General Approach**

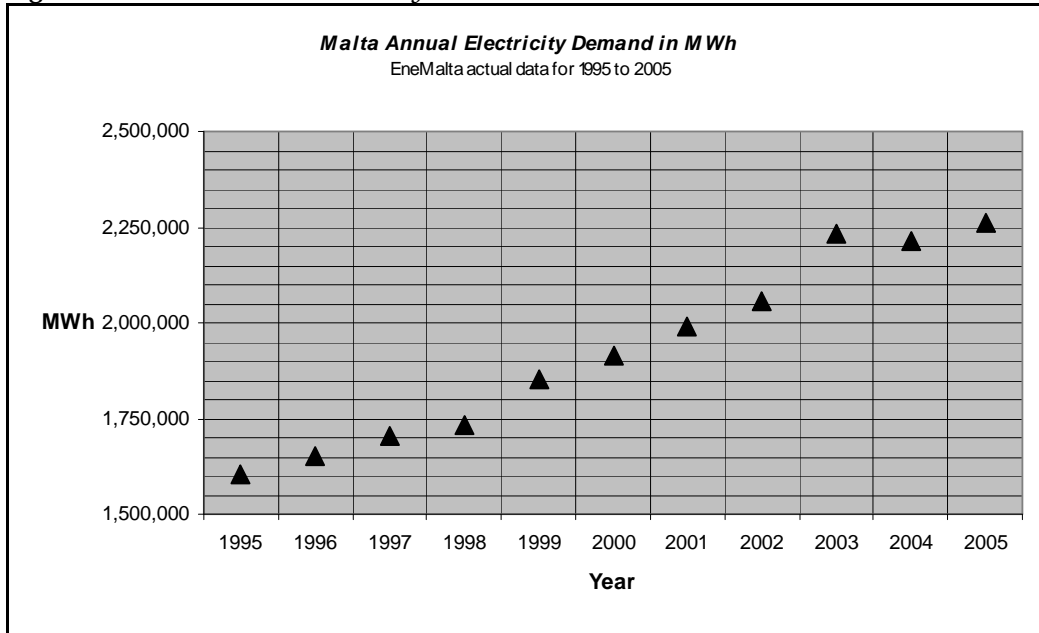
Only two installations currently fall within the scope of the EU ETS, namely the Marsa Power Station and the Delimara Power Station. Both installations are owned and operated by EneMalta, which is the government-owned corporation responsible for electricity generation in Malta. There are no other power generating plants in Malta, and there are no electricity interconnectors between Malta and any other country (whether inside or outside the EU).

On the basis of the Decision taken by the European Commission on Malta's proposed allocation, the Government of Malta has decided to allocate the total quantity of available allowances, that is 10,715,305 tonnes CO<sub>2</sub> equivalent, to these two installations, with no allocation to be reserved for new entrants. The following sections explain in detail the rationale behind and the methodology applied for the distribution of the allowances among the two installations.

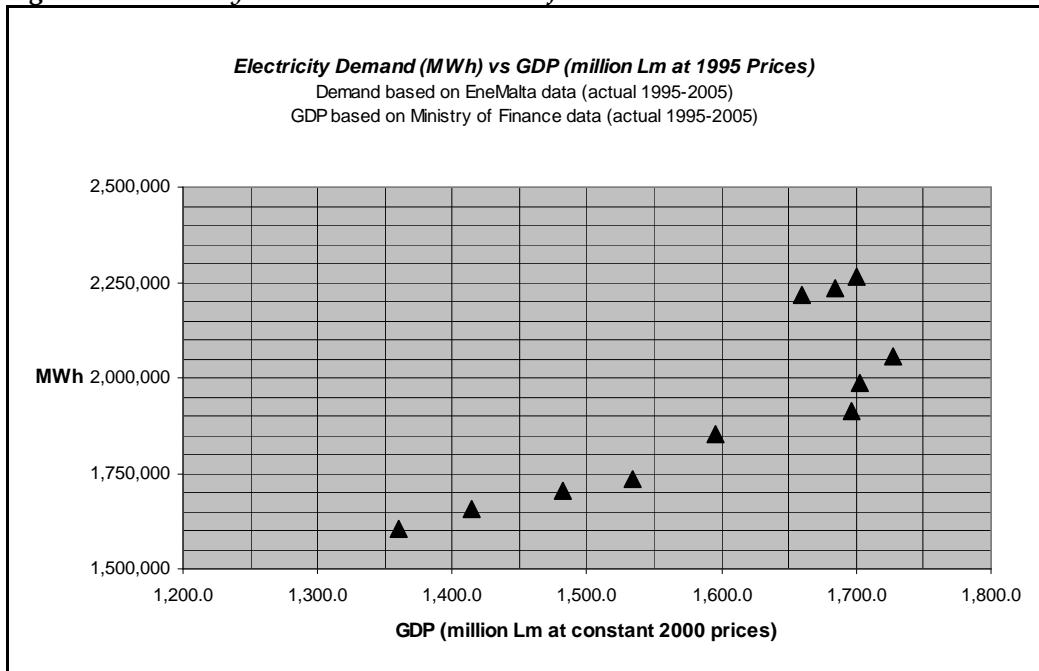
### *Demand Based on 'Business as Usual' (Gross Demand)*

There are correlations between electricity demand and both time (Figure 1) and Malta's Gross Domestic Product (GDP) expressed in Maltese lira at constant 2000 prices (Figure 2)<sup>9</sup>. Data on the demand for electricity has been provided by EneMalta.

**Figure 1: Malta Annual Electricity Demand**



**Figure 2: Electricity Demand as a Function of GDP**



<sup>9</sup> National Statistics Office. Note that GDP data used for the first NAP were at constant 1995 prices, and that data prior to 1998 was not based on the European System of Accounts (ESA 95) methodology.

We have used the data over the base period from 1995 to 2005 to establish the relationship between these three variables (Table 1). This allows us to develop projections for demand over the period covered by the Plan (2008 to 2012) based on projections of GDP<sup>10</sup> to provide base 'business as usual' estimates for electricity demand. GDP data (column 2) are again at 2000 prices, with firm data from 1995 to 2005 and projections from 2006 to 2012. The electricity demand figures (column 4) are EneMalta data based on actual output from 1995 to 2005 and projections (not used in developing the correlation) from 2006 to 2012.

**Table 1 : Gross Electricity Demand, GDP and Time (Projections in Italics)**

| 1                                                        | 2                              | 3                                  | 4                                               | 5                                           | 6                                               | 7                                           |
|----------------------------------------------------------|--------------------------------|------------------------------------|-------------------------------------------------|---------------------------------------------|-------------------------------------------------|---------------------------------------------|
| Year                                                     | GDP @ 2000 Prices (million Lm) | % Increase in GDP on previous year | Gross Elec. Demand : Actual <sup>11</sup> (MWh) | % Increase in Elec. Demand on previous year | Gross Elec. Demand : Based on Correlation (MWh) | % Increase in Elec. Demand on previous year |
| <b>Base Period for Second National Allocation Period</b> |                                |                                    |                                                 |                                             |                                                 |                                             |
| 1995                                                     | 1,359.9                        | 4.9%                               | 1,603,196                                       | 1.86%                                       | 1,579,901                                       | 4.45%                                       |
| 1996                                                     | 1,414.1                        | 4.0%                               | 1,654,696                                       | 3.21%                                       | 1,648,648                                       | 4.35%                                       |
| 1997                                                     | 1,482.7                        | 4.9%                               | 1,703,682                                       | 2.96%                                       | 1,715,013                                       | 4.03%                                       |
| 1998                                                     | 1,533.5                        | 3.4%                               | 1,733,554                                       | 1.75%                                       | 1,784,330                                       | 4.04%                                       |
| 1999                                                     | 1,595.7                        | 4.1%                               | 1,854,151                                       | 6.96%                                       | 1,851,757                                       | 3.78%                                       |
| 2000                                                     | 1,696.3                        | 6.3%                               | 1,914,016                                       | 3.23%                                       | 1,912,829                                       | 3.30%                                       |
| 2001                                                     | 1,702.5                        | 0.4%                               | 1,988,226                                       | 3.88%                                       | 1,989,539                                       | 4.01%                                       |
| 2002                                                     | 1,727.4                        | 1.5%                               | 2,057,301                                       | 3.47%                                       | 2,063,153                                       | 3.70%                                       |
| 2003                                                     | 1,684.3                        | -2.5%                              | 2,235,541                                       | 8.66%                                       | 2,148,037                                       | 4.11%                                       |
| 2004                                                     | 1,659.4                        | -1.5%                              | 2,216,103                                       | 0.82%                                       | 2,229,904                                       | 3.81%                                       |
| <b>First National Allocation Period</b>                  |                                |                                    |                                                 |                                             |                                                 |                                             |
| 2005                                                     | 1,700.8                        | 2.5%                               | 2,263,424                                       | 4.00%                                       | 2,300,779                                       | 3.18%                                       |
| 2006                                                     | 1,734.8                        | 2.0%                               | 2,456,230                                       | 3.34%                                       | 2,372,881                                       | 3.13%                                       |
| 2007                                                     | 1,774.7                        | 2.3%                               | 2,532,431                                       | 3.10%                                       | 2,444,007                                       | 3.00%                                       |
| <b>Second National Allocation Period</b>                 |                                |                                    |                                                 |                                             |                                                 |                                             |
| 2008                                                     | 1,815.5                        | 2.3%                               | 2,608,134                                       | 2.99%                                       | 2,514,983                                       | 2.90%                                       |
| 2009                                                     | 1,857.3                        | 2.3%                               | 2,683,283                                       | 2.88%                                       | 2,585,793                                       | 2.82%                                       |
| 2010                                                     | 1,900.0                        | 2.3%                               | 2,757,935                                       | 2.78%                                       | 2,656,454                                       | 2.73%                                       |
| 2011                                                     | 1,943.7                        | 2.3%                               | 2,832,033                                       | 2.69%                                       | 2,726,949                                       | 2.65%                                       |
| 2012                                                     | 1,988.4                        | 2.3%                               | 2,905,577                                       | 2.60%                                       | 2,797,279                                       | 2.58%                                       |

The correlation identified using regression analysis (best fit) is:

$$D = (A \times Y) + (B \times G) + C$$

Where

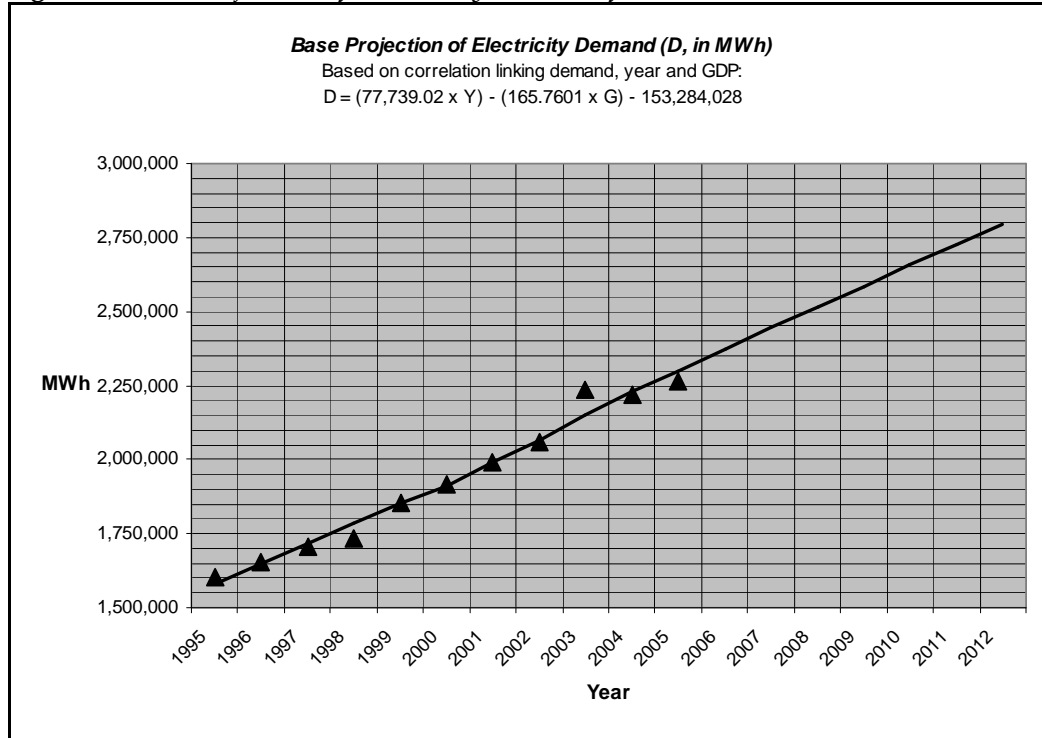
- D = Annual Electricity Demand (MWh)  
A = + 77,739.02 (constant)  
Y = Year (e.g. 2002)  
B = - 165.7601 (constant)  
G = GDP at 2000 prices (million Lm)  
C = - 153,284,028 (constant)

<sup>10</sup> Communication of MEPA with Economic Policy Division, Ministry of Finance, April 2006.

<sup>11</sup> Projections for 2006 to 2012 using NAP I equation.

The correlation based on this equation provides a smoothed relationship that is a good fit to the EneMalta data over the base period 1995 to 2005 (Figure 3). Based on the correlation, projections over the period 2008 to 2012 indicate a total demand of 13,281,457 MWh (Table 1).

**Figure 3: Base Projection of Electricity Demand (from Correlation)**



### Major New Projects

As noted above, single projects and other known developments that are not large in absolute terms (at least by the standards of larger Member States) can have a significant impact on electricity demand in a small country like Malta. In preparing the NAP for the first trading period (2005-2007) we identified two such projects that were already underway. These were judged to have a significant impact on electricity demand as they became operational. An additional provision was therefore made for these projects during the first trading period.

We are proposing that there should be a similar allowance in the second trading period, to take account of similar major projects that are likely to come on stream during this period. We have identified the following projects:

- The *Mater Dei Hospital* is now expected to come on stream in 2007. With an installed capacity of 20 MW it is expected to lead to an increase in demand of 91,104 MWh per annum. As a major public project, we have assumed that 80% of this demand (72,883 MWh per annum) is not accounted for in the projected increase in GDP;
- The *Smart City Development* is a major new commercial and industrial development that is also expected to be completed during the course of this second period. Annual demand is expected to be 43,800 MWh from 2008, rising

to 87,600 MWh in 2010. The Ministry of Finance have confirmed that this development was not taken into account in the GDP projections used, so all of this demand is additional to the baseline projection of demand increase;

- In addition, we have identified a number of new commercial and housing developments that may be completed during the period 2008 to 2012. Since this represents a very significant increase in the rate of development (for example, in terms on 'new' floor space) compared to the projected increase in GDP, we have included a small additional allowance (5,000 MWh in 2008, increasing by the same amount each year) to cover these projects. The maximum allowance of 25,000 MWh in 2012 is less than 1% of the total demand).

On this basis, the increase in demand due to major new projects that is NOT taken into account in the projected increase in GDP rises from 121,683 MWh in 2008 to 185,483 MWh in 2012 (Table 2). This represents an average additional demand of 6.0% over the five year period.

**Table 2: Projected Impact of New Projects**

| <i>Project</i>                  | <i>Annual Load (GWh)</i> | <i>2008 (GWh)</i> | <i>2009 (GWh)</i> | <i>2010 (GWh)</i> | <i>2011 (GWh)</i> | <i>2012 (GWh)</i> |
|---------------------------------|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Mater Dei Hospital              | 91.1                     | 72.9              | 72.9              | 72.9              | 72.9              | 72.9              |
| Smart City & environs (phase 1) | 43.8                     | 43.8              | 43.8              | 43.8              | 43.8              | 43.8              |
| Smart City & environs (phase 2) | 43.8                     | --                | --                | 43.8              | 43.8              | 43.8              |
| Other projects                  | 10.0 p.a.                | 5.0               | 10.0              | 15.0              | 20.0              | 25.0              |
| <b>Total</b>                    |                          | <b>121.7</b>      | <b>126.7</b>      | <b>175.5</b>      | <b>180.5</b>      | <b>185.5</b>      |

One further issue here is that the implementation of projects naturally lags behind their approval for planning purposes. In the longer term, MEPA proposes to take steps to ensure that all such major projects are required (as far as practicable) to incorporate alternative energy generation systems, including cogeneration and renewables and/or energy saving measures in their design. However, because of the lag in the system (and the fact that the policy has not yet been adopted) this is unlikely to have a significant impact within this second trading period.

#### **Impact of Demand Reduction Measures**

The government of Malta is promoting a number of energy efficiency programmes that are expected to have a significant impact on electricity demand before the end of this second trading period. It is important to recognize that, in Malta, electricity accounts for a very high proportion of energy use in all sectors - and particularly in buildings in the housing (domestic) sector. Thus, for example, the installation of solar water heaters will have a direct impact on the demand for electricity rather than on the (direct) use of fossil fuels.

These programmes are identified in Malta's proposed draft National Energy Policy, in which energy efficiency has been defined as the first policy area. This covers not only efficiency in electricity generation and distribution but also energy end-use efficiency and energy efficiency in transport. Measures already undertaken include:

- The appointment of 'green leaders' to promote energy efficiency in the public sector;
- Significant reduction in energy demand in the water services sector (falling from 15% of electricity in 1995 to only 6% in 2004) and by other large energy consumers;
- Provision of grants towards the cost of roof insulation and solar water heaters;
- Investment in energy efficiency in the tourism sector (through Structural Funds);
- Programmes targeted at domestic consumers and other sectors of the economy;
- Pilot projects in the energy efficient design of housing.

Additional measures are being developed, and these are set out in a national Energy Efficiency Action Plan (EEAP), which was prepared in accordance with the requirement of the recent Energy End-Use Efficiency and Energy Services Directive (2006/32/EC)<sup>12</sup>. We have assumed that the level of savings to be achieved will be the same as the indicative targets defined in Directive 2006/32/EC. This directive defines indicative targets that increase by 1% each year from 2008. We have therefore assumed that the target in 2008 will be 1% of electricity consumption, rising to 5% of electricity consumption in 2012.

On this basis, energy efficiency programmes may be expected to reduce electricity demand by 431,010 MWh over the five-year period covered by the NAP, rising from 26,367 MWh in 2008 to 149,138 MWh in 2012.

### *Contribution of Renewable Energy Sources*

Malta has already reported on the implementation of the Directive on the Promotion of Electricity from Renewable Energy Sources<sup>13</sup>, and a more detailed Renewable Energy Policy document is in preparation. The report on the Renewables Directive indicated a national indicative target of 1.37% of electricity from renewable energy sources by 2010. However, this target was heavily based on the contribution of large scale wind power, without which the contribution of renewable energy was expected to fall to 0.31%.

Since that report was submitted, the government has adopted a policy banning large-scale land-based wind power. This policy is intended to reflect the extreme shortage of land space in Malta (the most densely-populated EU Member State) and the potentially adverse impacts of such developments in close proximity to tourism infrastructure. The government remains enthusiastic about the potential for off-shore wind, and is taking active steps to encourage this. However, the technology for far-offshore (deep water) wind power is not yet fully developed, while the number of sites for near-offshore (shallow water) wind is also constrained by the tourism industry, conflicting uses and other developments.

Projections for the contribution of renewable energy over the second trading period are therefore based on known projects in the fields of energy-from-waste, biomass and solar photovoltaic (Table 3). No wind energy projects have been included at this stage, because it is felt that the likelihood of any project coming on stream during the

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<sup>12</sup> OJ L 114/64, 27/4/2006

<sup>13</sup> Report by Malta to the European Commission on the Implementation of Directive 2001/77/EC on the Promotion of Electricity from Renewable Energy Sources, October 2005.

second trading period is now low. However, the contribution of renewable energy in 2010 is now 0.89% of total electricity demand – significantly higher than the 0.31% originally projected without wind.

**Table 3: Projected Contribution of Renewable Energy Projects**

| <i>Project</i>                       | <i>Unit Capacity (MW)</i> | <i>2008 (MWh)</i> | <i>2009 (MWh)</i> | <i>2010 (MWh)</i> | <i>2011 (MWh)</i> | <i>2012 (MWh)</i> | <i>Total (MWh)</i> |
|--------------------------------------|---------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| Landfill gas: Maghtab Phase 1        | 0.300                     | 2,365             | 2,365             | 2,365             | 2,365             | 2,365             | 11,826             |
| Landfill gas: Maghtab Phase 2        | 0.500                     | --                | --                | 3,942             | 3,942             | 3,942             | 11,826             |
| Digestion: Sewage Sludge South       | 1.000                     | 8,392             | 8,392             | 8,392             | 8,392             | 8,392             | 41,960             |
| Digestion: Animal Waste              | 0.761                     | --                | --                | --                | --                | 23,999            | 23,999             |
| Digestion: Municipal Waste Treatment | 1.268                     | 9,997             | 9,997             | 9,997             | 9,997             | 9,997             | 49,985             |
| Solar Photovoltaic                   | 0.120                     | 168               | 336               | 505               | 673               | 841               | 2,523              |
| <b>Total</b>                         |                           | <b>20,922</b>     | <b>21,091</b>     | <b>25,201</b>     | <b>25,369</b>     | <b>49,536</b>     | <b>142,119</b>     |

### Net Electricity Demand Projections

It follows that Malta's net electricity demand (to be met by EneMalta) is expected to total 13,498,145 MWh over the 5-year trading period, rising from 2,589,377 MWh in 2008 to 2,784,088 MWh in 2012 (Table 4). This is a projected increase of 7.5% over the trading period, compared to a projected increase of 9.5% in GDP. It follows that the measures identified in the preceding sections go some way towards further decoupling Malta's electricity demand (and therefore the related emissions) from economic growth.

**Table 4: Projected Net Electricity Demand (million MWh)**

|                                                                                       | 2008         | 2009                    | 2010                    | 2011                    | 2012                    |
|---------------------------------------------------------------------------------------|--------------|-------------------------|-------------------------|-------------------------|-------------------------|
| <b>GDP (million Lm 2000)</b>                                                          |              |                         |                         |                         |                         |
| Gross Domestic Product<br>(% increase on 2008)                                        | 1,815.5      | 1,857.3<br>(+2.3%)      | 1,900.0<br>(+4.7%)      | 1,943.7<br>(+7.1%)      | 1,988.4<br>(+9.5%)      |
| <b>Electricity Demand (million MWh)</b>                                               |              |                         |                         |                         |                         |
| Electricity Demand, from<br>Correlation                                               | 2.515        | 2.586                   | 2.656                   | 2.727                   | 2.797                   |
| Additional Demand from New<br>Projects                                                | 0.122        | 0.127                   | 0.175                   | 0.180                   | 0.185                   |
| <b>Total Gross Electricity Demand</b>                                                 | <b>2.637</b> | <b>2.712</b>            | <b>2.832</b>            | <b>2.907</b>            | <b>2.983</b>            |
| Impact of Demand Reduction<br>Measures                                                | 0.026        | 0.054                   | 0.085                   | 0.117                   | 0.149                   |
| Contribution of Renewable Energy                                                      | 0.021        | 0.021                   | 0.025                   | 0.025                   | 0.050                   |
| <b>Total Net Electricity Demand<br/>to be met by EneMalta</b><br>(% increase on 2008) | <b>2.589</b> | <b>2.637</b><br>(+1.8%) | <b>2.722</b><br>(+5.1%) | <b>2.766</b><br>(+6.8%) | <b>2.784</b><br>(+7.5%) |

### Meeting the Net Electricity Demand

The demand is currently met by the EneMalta plants at Marsa and Delimara. This has to take place within the constraints arising from various *acquis* instruments, and the limit on CO<sub>2</sub> emissions from these two power plants under the ETS Directive.

Some of the older units at Marsa do not comply with the Large Combustion Plants Directive, and so will need to be closed after a maximum of 20,000 operating hours from 1<sup>st</sup> January 2008 unless they are compliant with emissions limit values set out in the Directive by the beginning of 2008. If they are operated at full capacity from the start of 2008, they would need to be closed in mid 2010. However, EneMalta has assumed that this will not be the case and that they will therefore be able to make some contribution beyond 2010.

EneMalta accepts that additional capacity of at least 100 MW will be needed to replace the Marsa units that will be closed. However, no final decision has yet been taken on how (or, indeed, where) this will be achieved. One option would be to install an additional 130 MW CCGT plant at Delimara, but other technical options under active consideration include an electricity interconnector with Sicily and/or a gas supply (pipeline or LNG tanks). It is clear that no decision will be taken before the NAP is to be finalised, yet those decisions will have a fundamental impact on the future operations of EneMalta and its emissions of CO<sub>2</sub>.



We have therefore no option other than to assume (for the purposes of the NAP) that the Marsa plant will continue to contribute at its current level of 1,177,015 MWh per annum from 2008 to 2012, with the Delimara plant accounting for the remainder (including all the projected growth in demand). The Marsa plant is older, less reliable and less efficient than the Delimara plant. However, the overall efficiencies of both plants have improved over the years (Figure 4) as new (more efficient) units have come on stream (Delimara) and existing units have been upgraded and converted from coal firing to oil firing (Marsa).

The efficiency of the two plants (in tonnes of CO<sub>2</sub> per MWh generated) has been projected based on EneMalta data for the period 1995 to 2005 (Figure 4). These emission factors are represented by the equation:

$$E = A - (B \times Y)$$

Where

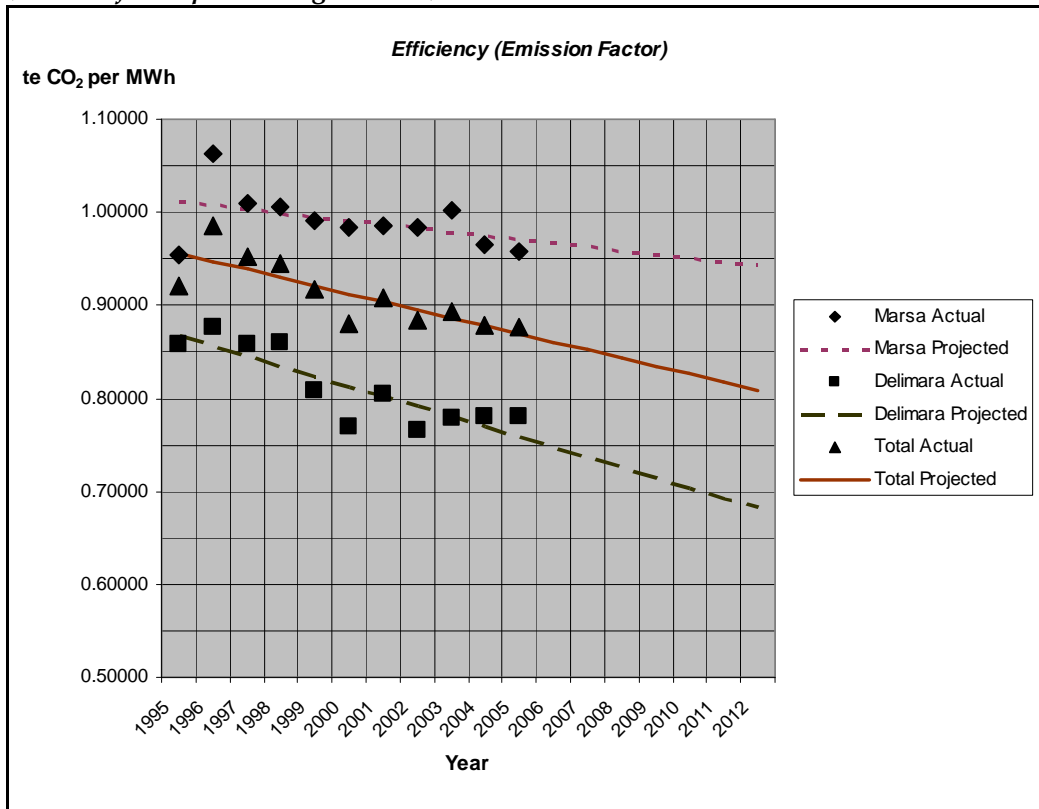
|   |   |                                                                               |
|---|---|-------------------------------------------------------------------------------|
| E | = | Emission factor (average tonnes of CO <sub>2</sub> emitted per MWh generated) |
| A | = | Constant                                                                      |
| B | = | Constant                                                                      |
| Y | = | Year (e.g. 2002)                                                              |

The projections for the two plants are:

Marsa            Emission factor (t CO<sub>2</sub>/MWh) = 9.0766 - (0.004043 x Year)

Delimara        Emission factor (t CO<sub>2</sub>/MWh) = 22.630 - (0.010909 x Year)

**Figure 4: Efficiencies (Emission Factors) for Marsa and Delimara Power Plants (tonnes of CO<sub>2</sub> per MWh generated)**



At this stage we have assumed that the observed rates of improvement (in terms of average CO<sub>2</sub> emissions per MWh generated) will continue. To limit the distribution of allowances among the two plants within the emission constraints presented by the Commission’s decision, a further improvement of 2.5% in the trend of CO<sub>2</sub> emissions per MWh generated is applied, in line with the assumptions made by the Commission in its assessment of Malta’s NAP with respect to improvement in C intensity.

It is clear that in practice such rate of improvement cannot continue indefinitely, and indeed there are technical reasons why this cannot be the case. In particular, a number of units will need to install equipment to reduce emissions of nitrogen oxides (NO<sub>x</sub>), and this is known to increase emission factors and therefore CO<sub>2</sub> emissions. However, this will be at least partially offset by the fact that older and less efficient units at Marsa will be closed and replaced by newer units with lower emission factors. In the absence of any more detailed scenarios about the mix of plants that will be used (particularly post 2010), this is the only realistic way of identifying potential emission levels.

Translating electricity generation projections into emissions on the basis of the issues discussed above, results in a difference between the sum of the quantities of allowances as determined for the two power plants and the total allowed quantity of allowances as determined using the Commission’s methodology in its Decision on Malta’s NAP. This surplus amounts to 42,319 tonnes of CO<sub>2</sub> equivalent over the five-year period. In line with the decision taken by the Government of Malta that the

total quantity of allowances for this period be allocated to the two installations that are already participating in the scheme, and in the light of the fact that Delimara is expected to take on the greater share of new electricity demand, this surplus has been distributed as an extra annual allocation to the Delimara power plant.

On this basis, the provisional CO<sub>2</sub> emissions from Marsa would fall from 1,100,256 tonnes in 2008 to 1,081,699 tonnes in 2012. Conversely, the CO<sub>2</sub> emissions from Delimara would rise from 1,007,581 tonnes in 2008 to 1,076,951 tonnes in 2012 because the projected improvements in efficiency are more than offset by the impact of the increased net demand. Total emissions of CO<sub>2</sub> over the trading period would actually rise from 2,107,837 tonnes in 2008 to 2,158,650 tonnes in 2012, a total of 10,715,305 tonnes over the 5-year trading period (Table 5).

**Table 5: Electricity Output and CO<sub>2</sub> Emissions**

|                                                                                                 | 2008         | 2009         | 2010         | 2011         | 2012         | Total         |
|-------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Marsa Output (million MWh)                                                                      | 1.177        | 1.177        | 1.177        | 1.177        | 1.177        | 5.885         |
| Marsa Efficiency (t CO <sub>2</sub> /MWh)                                                       | 0.959        | 0.955        | 0.951        | 0.947        | 0.943        | 0.951         |
| 2.5% improvement in Marsa Efficiency (t CO <sub>2</sub> /MWh)<br>= Efficiency factor X 0.975    | 0.935        | 0.931        | 0.927        | 0.923        | 0.919        | 0.927         |
| <b>Marsa CO<sub>2</sub> Allocation (M t CO<sub>2</sub>)</b>                                     | <b>1.100</b> | <b>1.096</b> | <b>1.091</b> | <b>1.086</b> | <b>1.082</b> | <b>5.455</b>  |
| Delimara Output (MWh)                                                                           | 1.412        | 1.460        | 1.545        | 1.589        | 1.607        | 7.613         |
| Delimara Efficiency (t CO <sub>2</sub> /MWh)                                                    | 0.726        | 0.715        | 0.704        | 0.693        | 0.682        | 0.703         |
| 2.5% improvement in Delimara Efficiency (t CO <sub>2</sub> /MWh)<br>= Efficiency factor X 0.975 | 0.707        | 0.697        | 0.686        | 0.676        | 0.665        | 0.685         |
| Delimara CO <sub>2</sub> Emissions (M t CO <sub>2</sub> )                                       | 0.999        | 1.017        | 1.060        | 1.073        | 1.069        | 5.218         |
| <b>Final Delimara CO<sub>2</sub> Allocation - including surplus (M t CO<sub>2</sub>)</b>        | <b>1.008</b> | <b>1.026</b> | <b>1.068</b> | <b>1.082</b> | <b>1.077</b> | <b>5.260</b>  |
| <b>Total EneMalta CO<sub>2</sub> Emissions (M t CO<sub>2</sub>)</b>                             | <b>2.108</b> | <b>2.121</b> | <b>2.159</b> | <b>2.168</b> | <b>2.159</b> | <b>10.715</b> |

1.3 *What is the total quantity of allowances to be allocated (for free and by auctioning), and what is the proportion of overall emissions that these allowances represent in comparison with emissions from sources not covered by the emissions trading Directive? Does this proportion deviate from the current proportion of emissions from covered installations? If so, please give reasons for this deviation with reference to one or more criteria in Annex III to the Directive and/or to one or more other objective and transparent criteria.*

Malta's proposed total quantity of allocation for the period 2008 to 2012, based on the methodology and assumptions outlined above, is therefore **10,715,305** tonnes of CO<sub>2</sub> all of which will be allocated to EneMalta.

As in the first trading period, we are proposing that the allowances for both installations should be allocated for free.

In the first instance, the allocations to EneMalta do not deviate significantly from the current proportion of emissions. However, any increase in demand arising from GDP and other factors would be met preferentially by the more efficient Delimara plant. The output of Marsa is assumed constant at the same level as its average output over the three years 2003 to 2005.

1.4 *What policies and measures will be applied to the sources not covered by the emissions trading Directive? Will use be made of the flexible mechanisms of the Kyoto Protocol? If so, to what extent and what steps have been taken so far (e.g. advancement of relevant legislation, budgetary resources foreseen)?*

Data for the year 2003 are available from the 2003 Greenhouse Gas Inventory carried out according to IPCC guidelines, and reported to the UNFCCC and the EC. In that year, CO<sub>2</sub> emissions from power generation amounted to three-quarters of total CO<sub>2</sub> emissions for the country (Table 6), and to about 63% of overall emissions of the Kyoto Protocol gases CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O.

**Table 6: Malta CO<sub>2</sub> Emissions by Sector (2003)**

| <i>Sector</i>                           | <i>Emissions<br/>(million tonnes)</i> | <i>% of Total<br/>Emissions</i> |
|-----------------------------------------|---------------------------------------|---------------------------------|
| Energy Industries                       | 1.973                                 | 74.9%                           |
| Transport                               | 0.525                                 | 19.9%                           |
| Other sectors                           | 0.089                                 | 3.4%                            |
| Manufacturing Industries & Construction | 0.048                                 | 1.8%                            |
| <b>Total</b>                            | <b>2.635</b>                          | <b>100%</b>                     |

Malta does not have any greenhouse gas emission reduction or limitation obligations under the Kyoto Protocol or under Decision 2002/358/EC. As a non Annex I country, Malta can in principle participate as a host country in projects under the Clean Development Mechanism (CDM). Despite the complexity of CDM and Malta's limited energy consumption, the possibility of one or more CDM projects in Malta during the 2nd Trading Period cannot be discounted. However, EneMalta will not be getting CERs that can be used for compliance as it will not be funding CDM projects, unless it purchases CERs from the emissions trading market as per Directive 2004/101/EC.

Although it has no emissions reduction target, Malta is taking concrete steps to reduce its emissions of greenhouse gases. Although the National Energy Strategy has not yet been approved, a number of demand side measures (energy efficiency) and supply side measures (renewable energy) are already underway or planned. As noted above (1.3) a number of these measures will contribute to a reduction in the net demand for electricity to be met by the two EneMalta power plants.

A more comprehensive list of potential measures was provided in Malta's first National Allocation Plan. However, the National Energy Policy and the Renewable Energy Policy will provide a much more concrete indication of the measures that will be implemented, and will identify the timescales that are envisaged and the reduction in demand that should be achieved.

1.5 *How has the national energy policy been taken into account when establishing the total quantity of allowances to be allocated? How is it ensured that the total quantity of allowances intended to be allocated is consistent with a path towards achieving or overachieving the Member State's target under Decision 2002/358/EC or under the Kyoto Protocol (as applicable)?*

As already noted, a National Energy Policy (incorporating a National Energy Plan) is in preparation. Although this document has not yet been approved, it will provide a basis for addressing both supply side issues (including renewable energy) and demand side issues (including energy efficiency). As such, it will provide a framework for positive action by the Maltese Government to further reduce the intensity of GHG emissions and, in particular, to further decouple CO<sub>2</sub> emissions from economic growth.

As Malta is not an Annex I country, it does not have emission reduction targets under Decision 2002/358/EC or under the Kyoto Protocol. For this second trading period, the quantity of allowances to be allocated has again been determined using a 'business as usual' scenario (see 1.2), but allowing for the positive contribution of energy efficiency initiatives, renewable energy programmes and planned investment by EneMalta, and incorporating an additional improvement in C intensity in the sector under consideration in this Plan in line with the Commission's assumptions.

1.6 *How is it ensured that the total quantity of allowances to be allocated is not more than is likely to be needed for the strict application of the criteria of Annex III? How is consistency with the assessment of actual and projected emissions pursuant to Decision 280/2004/EC (which has repealed Decision 93/389/EEC) ensured?*

The total quantity of allowances to be allocated by Malta for this trading period is in line with the Commission's interpretation of the strict application of the criteria of Annex III for Malta, as presented in its decision on Malta's original NAP proposal. The distribution of the overall allocation among the installations is based on reasonably stringent projections of CO<sub>2</sub> emissions arising from net electricity demand during this period (see 1.2). An assumption that the overall efficiency of both installations will continue to improve through the trading period is therefore implicit in the 'business as usual' scenario.

1.7 *Please explain how the potential, including the technological potential, of activities to reduce emissions was taken into account in determining the total quantity of allowances.*

The potential, including the technical potential, to reduce emissions has been partially taken into account in determining the total quantity of allowances for this second trading period. Although Malta has at present no obligation to reduce its emissions, the allowances are based not simply on a 'business as usual' scenario but rather on net electricity demand after allowing for the impact of energy efficiency and renewable energy initiatives (section 1.2). While these do not yet reflect the full technical potential of these measures, at least a start has been made in decoupling CO<sub>2</sub> emissions from economic growth.

Furthermore, our approach also incorporates an assumption that improvements in the overall efficiency of power generation will continue to be achieved through the period covered by the NAP. The present generating capacity of the two EneMalta plants is based on a number of different units, which have different efficiencies. They include both steam generating, open and combined cycle plant, some operating on heavy fuel oil and some on gas oil (older coal-fired plants have been converted to heavy fuel oil firing).

It is the stated policy of EneMalta to reduce costs and emissions by operating the plants at maximum efficiency, by making technical improvements, and by using the most efficient plant, taking fuel and other costs into account. Although (for technical as well as commercial reasons) units using heavy fuel oil (HFO) have continued to operate as base load generators, the increased use of the more efficient combined cycle units has contributed to the trend of improving overall efficiency that has already been noted (Table 5).

Furthermore, it is EneMalta's policy to ensure that all new plants are capable of running on natural gas as well as on gas-oil. This would facilitate a switch to gas fuel at some point in the future (potentially within this trading period). This gas supply could be achieved using either liquefied natural gas (LNG) tankers or a gas pipeline between Sicily and Malta. While no decision has yet been taken, such a development would have a significant (beneficial) impact on EneMalta's CO<sub>2</sub> emissions. For example, a CCGT unit operating on gas produces only 35% as much CO<sub>2</sub> as the same plant operating on oil fuel.

1.8 Please list in Section 5.3 below the Community legislative and policy instruments that were considered in determining the total quantity of allowances and state which ones have been taken into account and how.

Both EneMalta power plants fall under the *Integrated Pollution Prevention and Control (IPPC) Directive (96/61/EC)* and the *Large Combustion Plants Directive (2001/80/EC)*. These directives impose strict emission standards on both Malta's power plants. However the older units at Marsa do not comply and may need to be closed as early as mid 2010 (the directive allows a maximum of 20,000 hours of operation after 1<sup>st</sup> January 2008), depending on their actual load factors from 2008 onwards. This underpins the decisions (and timescales) for the construction of the interconnector tunnel between Marsa and Delimara, together with the new generation unit at Delimara. Together these will allow more of the demand to be met from Delimara, while at the same time reducing emissions not only of pollutants such as SO<sub>2</sub> and NO<sub>x</sub> but also of greenhouse gases.

The Directive on *National Emission Ceilings for Certain Atmospheric Pollutants (2001/81/EC)* will also have an impact on the EneMalta power plants. This is likely to require measures to be taken to reduce emissions of nitrogen oxides. These would have an adverse impact on the emission factors of the plants affected, since measures to reduce NO<sub>x</sub> emissions generally increase CO<sub>2</sub> emissions for the same level of output. The potential impact on allowances of these measures has not yet been confirmed.

The *Directive on the Promotion of Renewable Energy (2001/77/EC)* is also relevant here. Malta's recent report to the EC indicated that it was expected that 1.37% of

Malta's electricity will be generated from renewable energy sources by 2010. However, the achievement of this target was heavily dependent on wind power which now seems unlikely in anything other than the long term (see 1.2). Nevertheless, we have assumed (based on an analysis of planned projects) that 0.89% of electricity will be met from renewable sources by 2010 and 1.66% by 2012.

If the technical option under consideration related to an electricity interconnector with Sicily materializes, this will also create the possibility of purchasing electricity from renewable sources.

The *Directive on Energy End-Use Efficiency and Energy Services (2006/32/EC)* provides a framework for the implementation of energy saving measures (see 1.2). This is a particularly significant issue in Malta, where virtually all energy demand is currently met by electricity. The notional targets set out in the directive are accepted as national targets by Malta.

|                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1.9 <i>If the Member State intends to auction allowances, please state the percentage of the total quantity of allowances that will be auctioned, and how the auction will be implemented.</i></p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

It is not anticipated that any allowances will be auctioned in this trading period. The allowances to EneMalta will be provided free of charge. Any allowances that may be available in due course in reserve for new entrants (both in the power sector and outside it) will also be provided free of charge, but only if individual new entrants have installations ready to operate within the trading period.

## 2. DETERMINATION OF THE QUANTITY OF ALLOWANCES AT ACTIVITY LEVEL

2.1 *By what methodology has the allocation been determined at activity level? Has the same methodology been used for all activities? If not, explain why a differentiation depending on activity was considered necessary, how the differentiation was done, in detail, and why this is considered not to unduly favour certain undertakings or activities within the Member State.*

In practical terms, this National Allocation Plan only covers the energy sector. The methodology used to identify the allocation has already been described (1.2).

The possibility of other activities falling within the scope of the ETS at some point in the future rests solely with new entrants. No allowances from the total allocation are reserved for new entrants. In the case, however, that any allowances would be available in the new entrants reserve, in accordance with section 5.2, any request for an allocation from such a reserve would be judged on its merits, based on the application of BAT and best practice in relation to energy efficiency. It would also take into account both the fuel used and the hours of operation.

2.2 *If the potential, including the technological potential, of activities to reduce emissions was taken into account at this level, please state so here and give details in Section 4.1 below.*

In Malta the potential to reduce emissions was limited for the 1<sup>st</sup> trading period. However, many improvements have already been made in recent years. The transition from coal to oil for energy production has been completed, and reductions in emissions have been demonstrated and reported in the 1<sup>st</sup> National Communication to the UNFCCC.

Further improvements can now be made not only by upgrading the existing generating plant but also through energy efficiency programmes to reduce demand and through the increasing contribution of renewable energy. However, these are constrained by effects on the social and economic sectors and by the long investment cycles necessary in such cases. In particular, major investments (such as the proposed 'energy-from-waste' plant) inevitably have long lead times with concrete results (in terms of significant reductions in CO<sub>2</sub> emissions) only evident after many years.

The possibility to make improvements is also limited by the fact that there is at present only one operator in Malta.

2.3 *If Community legislative and policy instruments have been considered in determining separate quantities per activity, please list the instruments considered in Section 5.3 and state which ones have been taken into account and how.*

There is only one activity in Malta which falls within the requirements of the Directive, and this relates to power generation.



2.4 *If the existence of competition from countries or entities outside the Union has been taken into account, please explain how.*

The NAP relates primarily to the electricity supply sector. Malta is a small island and is not at present linked in energy terms to any of its neighbours. It follows that the only prospect for competitors from outside the EU to be involved would be by entering the market either as a new entrant or through some sort of joint venture with EneMalta.

### 3. DETERMINATION OF THE QUANTITY OF ALLOWANCES AT INSTALLATION LEVEL

3.1 *By what methodology has the allocation been determined at installation level? Has the same methodology been used for all installations? If not, please explain why a differentiation between installations belonging to the same activity was considered necessary, how the differentiation by installation was done, in detail, and why this is considered not to unduly favour certain undertakings within the Member State.*

In Malta there are only two installations operating in the power generation sector. Both are under the control of a single operator, EneMalta. As already noted (1.2), the allocation between these units has been decided by applying a 'business as usual' scenario at installation level, and then using those figures to determine the total allocation for Malta (Table 5). This approach takes into account the different characteristics of the two installations, including their historic performance (output and efficiency), as well as the likely changes in the demand for electricity over the trading period and an extrapolation into the future of the trend in efficiency, including an additional improvement in line with the Commission's assumptions as presented in its decision on Malta's original NAP submission.

In allocating the demand between the two installations, we have assumed that the output from the Marsa installation will remain constant at its current level, while the balance of demand will be met by the (more efficient) Delimara plant.

It should be recognized that the allowances between the two installations will operate as a *de facto* EneMalta 'pool'. Thus allowances will inevitably be transferred between the two installations in response to operational constraints. However, it is clear that any excessive transfer of demand from Delimara to Marsa (for example) will result in the (notional) total allowances for the period in question being exceeded. In order not to exceed its total allowance, EneMalta will therefore need to compensate for this by transferring an equivalent level of additional demand to Delimara as soon as the problem has been resolved.

The limit on the use of CERs and ERUs by installations during this period is set at a level equivalent to 10% of the respective total allocation for each installation.

3.2 *If historical emissions data were used, please state whether they have been determined in accordance with the Commission's monitoring and reporting guidelines pursuant to Article 14 of the Directive or any other set of established guidelines, and/or whether they have been subject to independent verification.*

Any emissions data used in the methodology explained under section 1.2 have been determined on the basis of information obtained from the operator of the two installations on electricity generated and fuel used. Some of these data have been corroborated independently through the data collected in connection with Malta's 1<sup>st</sup> National Communication to the UNFCCC.

Projections as to future growth in electricity requirements are based on our extrapolations of electricity demand from historic data over the base period 1995 to

2005 to the trading period 2008 to 2012. This uses an identified correlation based on year and GDP as providing the 'best fit' with the observed data over the base period (see 1.2). As already noted, the relevant GDP data (past figures and future projections) have been provided by the Ministry of Finance, with past figures based on NSO data. It must be noted again that the methodology used before 1998 does not comply with ESA 95.

3.3 *If early action or clean technology were taken into account at this level, please state so here and give details in Sections 4.2 and/or 4.3 below.*

No account has been taken of 'early action' and 'clean technology' in the determination of allowances for this trading period.

3.4 *If the Member State intends to include unilaterally installations carrying out activities listed in Annex I below the capacity limits referred to in that Annex, please explain why, and address, in particular, the effects on the internal market, potential distortions of competition and the environmental integrity of the scheme.*

Malta does not intend at this stage to include any installations carrying out activities referred to in the first section of Annex I but which are below the capacity limits set out in the Annex.

3.5 *If the Member State intends temporarily to exclude certain installations from the scheme until 31 December 2007 at the latest, please explain in detail how the requirements set out in Article 27(2)(a)-(c) of Directive 2003/87/EC are fulfilled.*

Malta does not intend to exclude any installation specified in Annex I from the emissions trading scheme.

## 4. TECHNICAL ASPECTS

### 4.1. Potential, including technological potential

4.1.1 *Has criterion (3) been used to determine only the total quantity of allowances, or also the distribution of allowances between activities covered by the scheme?*

The distribution of allowances has been determined using an electricity generation scenario which takes account of the technical potential to improve the efficiency of power generation using the existing plants at the two installations. The fact that the plants fall under the IPPC and LCP directives implies that BAT will need to be achieved on or before 1<sup>st</sup> January 2008 (unless a plant is to be closed). This (closure) applies to some of the older units at Marsa, but these will continue to operate until at least 2010 and possibly longer. As already explained, it is not yet clear how (or when) this lost capacity will be replaced.

4.1.2 *Please describe the methodology (including major assumptions made) and any sources used to assess the potential of activities to reduce emissions. What are the results obtained? How is it ensured that the total quantity of allowances allocated is consistent with the potential?*

The approach used assumes that the historic rate of improvement (in the efficiency of power generation) at the two installations is maintained up to and through this trading period (see 1.2), with a further improvement being assumed in line with the Commission's assumptions on improvement of C intensity.

Estimates have also been made of the impact of specific energy efficiency and renewable energy programmes on the net demand for electricity (to be provided by EneMalta). These projections are based on individual targets and timescales, which although formally indicative, are believed to be realistic. However, it is clear that the ultimate (technical) potential in both areas is much greater.

4.1.3 *Please explain the method or formula(e) used to determine the quantity of allowances to allocate at the total level and/or activity level taking the potential of activities to reduce emissions into account.*

The relevant formulae are set out in 1.2 above.

4.1.4 *If benchmarking was used as a basis for determining the intended allocation to individual installations, please explain the type of benchmark used, and the formula(e) used to arrive at the intended allocation in relation to the benchmark. What benchmark was chosen, and why is it considered to be the best estimate to incorporate achievable progress? Why is the output forecast used considered to be the most likely development? Please substantiate the answers.*

No benchmarking was used in determining the allowances to be allocated. These were determined on the basis of reasonable projections as to electric power requirements in the period from 2008 to 2012.

## 4.2. Early action (if applicable)

4.2.1 *If early action has been taken into account in the allocation to individual installations, please describe in which manner it is accommodated. Please list and explain in some detail the measures that were accepted as early action and what the criteria for accepting them were. Please demonstrate that the investments/actions to be accommodated led to a reduction of covered emissions beyond what followed from any Community or national legislation in force at the time the action was taken.*

No early action has been taken into account in preparing this NAP.

4.2.2 *If benchmarks are used, please describe on what basis the grouping of installations to which the benchmarks are applied was made and why the respective benchmarks were chosen. Please also indicate the output values applied and justify why they are considered appropriate.*

No account of, or awards for, 'early action' have been made in the allowance allocations in this plan. However, the distribution of allocations for each year of the trading period depends on the increase in power generation potential of the two installations. Thus, the newer Delimara power station will get an increase in allocations over the three years (to reflect the increase in burden of power generation).

## 4.3. Clean technology

4.3.1 *How has clean technology, including energy efficient technologies, been taken into account in the allocation process?*

Clean technologies *per se* have not been taken into account in the allocation process. However, both installations will need to comply with BAT under the IPPC and LCP directives. The more modern plant at Delimara, which is more consistent with BAT, has been given a slightly higher share of the increase in allocations over the five years.

The units at Marsa that do not meet the standards set in the Large Combustion Plants Directive (which reflects BAT), will need to be de-commissioned perhaps as early as 2010. This means that additional generating capacity will be required, although the way in which this will be achieved has not yet been decided. The new plant would need to comply with BAT. If natural gas becomes available in Malta, there is scope for a significant reduction in CO<sub>2</sub> emissions through the implementation of BAT for gas-fired CCGT systems.

4.3.2 *If at all, which clean technology has been taken into account, and on what basis does it qualify as such? Have any energy production technologies intended to be taken into account been in receipt of approved State aid for environmental protection in any Member State? Please state whether any other industrial technologies intended to be taken into account constitute "best available techniques" as defined in Council Directive 96/61/EC, and explain in what way it is particularly performing in limiting emissions of covered greenhouse gases.*

Not applicable in this case (see 4.3.1 above).

## 5. COMMUNITY LEGISLATION AND POLICY

### 5.1. Competition policy (Articles 81-82 and 87-88 of the Treaty)

5.1 *If the competent authority has received an application from operators wishing to form a pool and if it is intended to allow it, please attach a copy of that application to the National Allocation Plan. What percentage of the total allocation will the pool represent? What percentage of the relevant sector's allocation will the pool represent?*

The competent authority has not received any application to form a pool. Both installations are operated by the same organization, so this is not necessary.

The Maltese government has decided not to allow the 'banking' of allowances at the end of the first trading period in December 2007. Banking at the end of the second (and subsequent) trading periods must be allowed (Article 13(3) of Directive 2003/87/EC).

### 5.2. Internal market policy - new entrants (Article 43 of the Treaty)

5.2.1 *How will new entrants be able to begin participating in the EU emissions trading scheme?*

No allocation is being reserved for new entrants from the start of the trading period. However, the reserve may be replenished through allowances not allocated to incumbent installations in the case that any such installation undergoes full closure.

In the case that a new entrant enters the scheme in Malta and no allowances are available in the reserve, the new entrant operator will necessarily have to purchase the allowances it requires.

Detailed rules on new entrants are set out in Appendix A below.

5.2.2 *In the case that there will be a reserve for new entrants, how has the total quantity of allowances to set aside been determined and on what basis will the quantity of allowances be determined for each new entrant? How does the formula to be applied to new entrants compare to the formula applied to incumbents of the relevant activity? Please also explain what will happen to any allowances remaining in the reserve at the end of the trading period. What will apply in case the demand for allowances from the reserve exceeds the available quantity of allowances?*

~~Allocations will be made to new entrants, as defined in the Directive, on a free of charge, first come first served basis from a general set aside of 3,831,328 tonnes of CO<sub>2</sub> from a total allowance of 14,777,981 tonnes of CO<sub>2</sub>. No reserve of allowances will be available in the new entrant reserve from the beginning of the trading period.~~

In the case that any allowances are available in the reserve through a replenishment as described under section 5.2.1, any allocation will be made on the basis of the rules for new entrants as set out in Appendix A. (Rules on the treatment of closures are also set out in this Appendix).

5.2.3 *Is information already available on the number of new entrants to expect (through applications for purchase of land, construction permits, other environmental permits etc.)? Have new or updated greenhouse gas emission permits been granted to operators whose installations are still under construction, but whose intention it is to start a relevant activity during the period 2005 to 2007?*

No information is currently available on any 'new entrant' that at present, has applied for or is in the process of obtaining the planning and/or environmental permits necessary to set up an installation that would fall under the scope of this Plan. MEPA is responsible for planning control as well as environmental issues, and so is well placed to receive advance warning of any such developments.

### 5.3. Other legislation or policy instruments

5.3.1 *Please list other Community legislation or policy instruments that were considered in the establishment of the National Allocation Plan and explain how each one has influenced the intended allocation and for which activities.*

As already noted (1.8), the IPPC Directive, the LCP Directive, the National Emission Ceilings Directive, the Renewables Directive and the Energy End-Use Efficiency and Energy Services Directive have all been considered in preparing the NAP. The IPPC and LCP directives will have a significant (positive) impact, since the closure of older non-compliant units (at Marsa) will eventually result in a greater proportion of demand being met by newer and more efficient units. However, the Emission Ceilings Directive may have a negative impact. The (positive) impact of energy efficiency initiatives and renewable energy programmes has also been taken into account in setting the targets for this second trading period.

5.3.2 *Has any particular new Community legislation been considered to lead to an unavoidable decrease or increase in emissions? If yes, please explain why the change in emissions is considered to be unavoidable, and how this has been taken into account.*

No. As noted above, the impact of the IPPC and LCP directives (which can be negative) will actually be positive during this trading period as a result of the closure of older, non-compliant units (see 5.3.1). However, the Emission Ceilings Directive may have a negative impact because measures to reduce NO<sub>x</sub> emissions are likely to increase emission factors for the affected units.



## 6. PUBLIC CONSULTATION

6.1 *How is this national allocation plan made available to the public for comments?*

Relevant stakeholders were consulted on the NAP through a series of meetings between 27<sup>th</sup> February and 12<sup>th</sup> May 2006.

The Draft NAP was completed and placed on the MEPA's web-site on 29<sup>th</sup> April 2006. Notices were placed in the press informing the public that this had been done, and requesting them to submit comments by 29<sup>th</sup> May 2006. The notice also informed the public that a public meeting to present and discuss the draft NAP would be held on Friday 28<sup>th</sup> April.

6.2 *How does the Member State provide for due account to be taken of any comments received before a decision on the allocation of allowances is taken?*

Comments received from both stakeholders and the public at the public meeting and (by e-mail) following the meeting. Valid comments from each stage of the public consultation process were used to revise the NAP prior to finalization of the document and a formal decision on allocation.

6.3 *If any comments from the public received during the first round of consultation have had significant influence on the national allocation plan, the Member State should summarize those comments and explain how they have been taken into account.*

The main comments received were:

- *It was difficult to prepare the National Allocation Plan in the absence of any formal Energy Policy and related targets:* agreed, but the EC's deadline did not allow MEPA to wait until the policy document had been completed;
- *Specific demand reduction measures and renewable energy projects need to be identified:* this part of the NAP has been strengthened since this comment was received;
- *It is not necessarily the case that EneMalta will install a new CCGT unit at Delimara:* agreed, and the text was changed following further consultation with EneMalta
- *Fuel costs are the main driver for EneMalta and its operating strategy:* this is true, since diesel fuel (LFO) is twice the price of HFO for a similar power output, it is hardly surprising that EneMalta uses its HFO-fuelled units to meet base loads;
- *The quoted renewable energy target will not be met without wind power, which is controversial and perhaps unlikely:* the target is believed to be realistic and does not depend on wind power as much as stated in the original report to the EC.

## 7. CRITERIA OTHER THAN THOSE IN ANNEX III TO THE DIRECTIVE

7.1 *Have any criteria other than those listed in Annex III to the Directive been applied for the establishment of the notified National Allocation Plan? If yes, please specify which ones and how they have been implemented. Please also justify why any such criteria are not considered to be discriminatory.*

No other criteria have been applied.

## 8. LIST OF INSTALLATIONS

| Installation 1 (Marsa)                           |                                                       |           |           |           |           |
|--------------------------------------------------|-------------------------------------------------------|-----------|-----------|-----------|-----------|
| <i>Name, address of each installation</i>        | Marsa Power Station,<br>Church Wharf,<br>Marsa, Malta |           |           |           |           |
| <i>Name of the operator of each installation</i> | EneMalta                                              |           |           |           |           |
| <i>Main activity</i>                             | Power generation                                      |           |           |           |           |
| <i>Total allowances</i>                          | 5,454,887 tonnes of CO <sub>2</sub>                   |           |           |           |           |
| <i>Annual breakdown</i>                          | 2008                                                  | 2009      | 2010      | 2011      | 2012      |
|                                                  | 1,100,256                                             | 1,095,617 | 1,090,977 | 1,086,338 | 1,081,699 |
| <i>Part of Pool?</i>                             | No                                                    |           |           |           |           |

| Installation 2 (Delimara)                        |                                                               |           |           |           |           |
|--------------------------------------------------|---------------------------------------------------------------|-----------|-----------|-----------|-----------|
| <i>Name, address of each installation</i>        | Delimara Power Station,<br>Delimara,<br>1/o Marsaxlokk, Malta |           |           |           |           |
| <i>Name of the operator of each installation</i> | EneMalta                                                      |           |           |           |           |
| <i>Main activity</i>                             | Power generation                                              |           |           |           |           |
| <i>Total allowances</i>                          | 5,260,418 tonnes of CO <sub>2</sub>                           |           |           |           |           |
| <i>Annual breakdown</i>                          | 2008                                                          | 2009      | 2010      | 2011      | 2012      |
|                                                  | 1,007,581                                                     | 1,025,836 | 1,068,383 | 1,081,667 | 1,076,951 |
| <i>Part of Pool?</i>                             | No                                                            |           |           |           |           |

## **APPENDIX A: RULES ON NEW ENTRANTS AND CLOSURES.**

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No allowances will be available in the new entrant reserve for allocation of allowances to new entrants from the start of the trading period.

However, the reserve may be replenished through allowances not allocated to incumbent installations in the case that full closure of such installations takes place, in accordance with the rules on closures set out below.

In the case of a request for allowances by a new entrant when a reserve does not contain any allowances or does not contain a quantity of allowances that would be enough to meet such a request, the new entrant would be required to purchase the full amount or the additional amount, as applicable, of the allowances that it may require.

In the case that the reserve would contain allowances for allocation to new entrants, such allocation shall be made on the following basis:

- a) The allocation to be made available to any new entrant will be determined by the Government, based on an assessment of the nature, scale and technical details of the proposed installation, including the fuel used and the hours of operation. No allocation will be greater than the allocation that would be allocated to a similar plant using BAT and/or clean technology.
- b) The allocation to be made available will take account of the timing of the project, including the time needed for construction, commissioning and work-up to full capacity. In particular, the allocation for the first year of operation is likely to be lower than that for subsequent years, reflecting the time for which the activity takes place.
- c) Any new entrant reserve allocation not used in one year may be transferred to later years within the trading period in question.
- d) If any part of the reserve has not been allocated to new entrants by the end of the trading period, it shall be cancelled.
- e) The following cases will be considered as a new entrant and will be eligible for allocation of allowances from the new entrant reserve:
  - i) a completely new installation that starts operation after the beginning of a trading period (therefore is issued a new greenhouse gas emission permit);
  - ii) a development that involves an extension to an already operating installation which has been issued a greenhouse gas emission permit, and that therefore results in a net increase in production capacity. It should be noted this has to involve an increase of the capacity already in place at that installation and covered by the existing greenhouse gas emission permit and will therefore require an update of the existing greenhouse gas emission permit of the existing installation to include the extension. The allocation would be made only for the 'extra' capacity put in place, and not for the installation as a whole;

- iii) a development that involves an extension to an already operating installation which has not previously been issued a greenhouse gas emission permit (as its existing production capacity did not warrant its inclusion in the scope of the Emission Trading Scheme), that results in an increase in production capacity that makes the installation eligible for participation in the emission trading scheme (and therefore will be issued a new greenhouse gas emission permit to cover the whole installation). The allocation would cover the whole capacity of the installation;
  - iv) a new installation that starts operation after the beginning of a trading period (therefore is issued a new greenhouse gas emission permit) that is operated by the same operator of an existing installation already covered by a greenhouse gas emission permit but is situated at a site different from that of the existing installation;
  - v) a new installation that start operation after the beginning of a trading period (therefore is issued a new greenhouse gas emission permit) that is operated by the same operator of an existing installation already covered by a greenhouse gas emission permit and is situated at the same site as the existing installation;
  - vi) a new installation that starts operation after the beginning of a trading period (therefore is issued a new greenhouse gas emission permit) that is operated by a different operator than the operator of an existing installation already covered by a greenhouse gas emission permit, however is situated at the same site as the existing installation.
- f) However, it should be noted that the increased use of production capacity already in place and covered by a greenhouse gas emission permit issued before the beginning of a trading period does not entitle the installation to an allocation of allowances from the new entrant reserve.

Closures of installations shall be treated as per the following rules: - please note that Annex I refers to Annex I of the Emissions Trading Directive (Directive 2003/87/EC)

- a) Full cessation: there is full cessation when an installation carrying out an Annex I activity or more than one Annex I activity permanently ceases operation of all Annex I activities, or permanently reduces the operation to such an extent that it would not fall anymore within the scope of the thresholds in Annex I, and the greenhouse gas emission permit for all Annex I activities is surrendered, or where the greenhouse gas emission permit is revoked.  
An operator of an installation that permanently ceases to carry out all Annex I activities shall retain the allowances issued for the year during which cessation occurs, but no further allowances will be issued to the operator for subsequent years of the trading period during which cessation of operation has occurred. Allowances that are not issued to an operator because of full cessation of operations at an installation will be added to the new entrant reserve for the trading period.
- b) Transfer of allowances to a new installation: the transfer of allowances from an existing installation that closes to a new installation (a new installation also includes an extension of another existing installation that would fall within

the scope of the definition for new entrant) may be possible only in the case that the two installations carry out the same Annex I activity and are operated by the same operator. It is the right of the competent authority to decide what constitutes a transfer of allowances between installations.

If the capacity of the new installation is greater than the capacity of the closing installation, an additional allocation of allowances from the new entrant reserve, if available, will be added to the allowances transferred to the new installation. The allocation of allowances from the new entrant reserve will be made according to the rules set out above. If the capacity of the new installation is lower than the capacity of the closing installation, the part of the allowances of the closing installation that is transferred to the new installation is calculated according to the rules for the calculation of allowances for new entrants. After the permanent closure of the closing installation, no more allowances will be issued to its operator. Allowances will be issued to the new installation as soon as it starts operation. The quantity of allowances to be transferred from the closing installation to the new installation will be reduced to reflect the time between the closure of the closing installation and the start of operations in the new installation during which no operation of the Annex I activity has taken place.