

National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gas Emissions

Ministry for Resources and Rural Affairs

Government of Malta

September 2009

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Executive Summary

The Ministry for Resources and Rural Affairs presents this National Strategy for Policy and Abatement Measures relating to the reduction of Greenhouse Gas emissions following a review of the work submitted to it by the Climate Change Committee it had appointed in June 2008 and a review of the feedback received following the national consultation process the Ministry held between January 2009 and March 2009.

It is pertinent to underline that in presenting this Strategy, public feedback is incorporated to calibrate or to introduce new actions within the Strategy to the extent that these were considered to add value to a realisable national strategy directed to reduce Greenhouse Gas emissions.

To the extent possible, the Strategy seeks to articulate the action that is to be adopted. Moreover, the Strategy has sought to prioritise each action – on the basis of financial cost, ability to implement, clear economic and environment impact, immediate positive impact and whether an abatement measure stems from a specific EU and / or UNFCCC requirement.

It is pertinent to underline that a number of the actions proposed in this Strategy require further study. It is not possible, nor realistic, to expect that the Strategy would be totally comprehensive in terms of the details and impacts of each policy and / or abatement measures placed under consideration. Climate Change and Greenhouse Gas emissions reduction encompass practically the whole gamut of public policy. An attempt, therefore, to present the Strategy as conclusive and definitive would only serve to discredit what is an important step forward in this critical policy domain.

Thus, where it was so possible, the Strategy, basing itself on the excellent work of the Climate Change Unit within the Malta Environment and Planning Authority, has sought to estimate the impact in terms of Greenhouse Gas emissions reduction as a direct result of a particular abatement measure. Where it has not been possible to determine this, the Strategy states so.

Moreover, a number of actions proposed in the Strategy require further detailed studies in their own right – comprehensive analysis to determine whether the respective action under consideration in actual fact is realisable, and more importantly, that it renders the highest tCO₂e reduction in Greenhouse Gas for every €1 investment required to realise the said measure.

It is imperative, therefore, to emphasise, that the presentation of this Strategy is one more step in the long journey that requires a process of change, review and transformation in the way Malta has behaved to date with regards to Climate Change by placing it, and therefore the reduction of Greenhouse Gas emissions, at the heart of public policy.

It is also imperative to underline that the Strategy as presented in this document is not immutable: mistakes will be made, lessons will be learnt, circumstances will change, new challenges will emerge and unforeseen opportunities will arise. It so follows, therefore, that it is of strategic critical importance that

the Strategy is maintained as dynamically as possible – therefore requiring constant review, validation, re-consideration, re-orientation, and re-prioritisation as and where appropriate.

The Strategy for policy and abatement measures relating to the reduction of Greenhouse Gas emissions is based on the following building blocks:



The actions presented with regards to the abatement measures proposed in this Strategy are expected to having the following impact in terms of reduction of Greenhouse Gas measures:

	2010 (Gg CO ₂ equiv)	2015 (Gg CO ₂ equiv)	2020 (Gg CO ₂ equiv)
Energy Demand Management			
Energy performance in buildings	N/A	N/A	N/A
Energy Efficiency Measures in Street lighting	0.84	1.91	1.71
Smart Metering	12/yr	12/yr	12/yr
ERDF Energy Grant		25	22
Energy saving lamps in the Domestic Sector	21	12	11
Rebates on Energy Efficient Domestic Appliances	4.2	(decreases to)	2.14
Total	38.04	54.08	47.31
RES Adoption			
Promotion of Solar Water Heaters	11	13	13
Grants on Micro RES Generation Equipment	1/yr	1/yr	1/yr
Energy saving measures in state schools		0.15	0.30
Total	12	14.15	14.30
Securing Effective Management of Water and Water Production			
Water Transfer and Distribution	24	14	12
Total	24	14	12
Agriculture and Waste Abatement Measures			
Bio-Gas Generation (taking into account Sant Antnin plant only)	62	57	57
Extraction of gases from closed landfills	52.5	(decreases to)	26.3
Extraction of gases from hazardous landfills	14	36.72	24.76
Total	128.5	133.12	108.06

In a scenario where the primary source of the generation of electricity by Enemalta Corporation continues to be conventional fuel sources the overall national carbon footprint by 2020 on the basis of the Greenhouse Gas emissions reduction shown above is as depicted in Diagram 01 below:

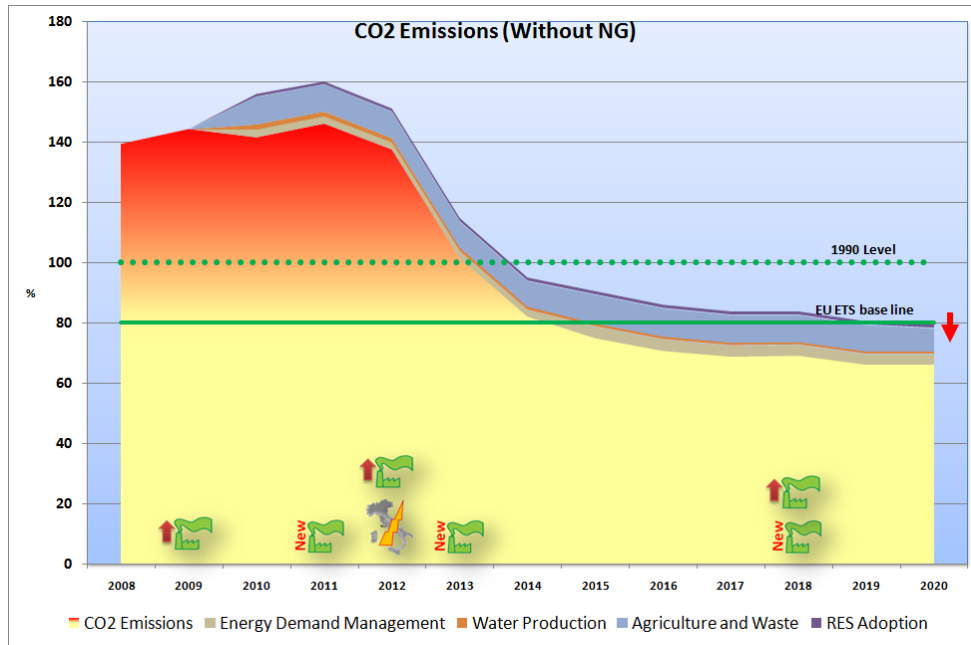


Diagram 01 - CO₂ Projected Carbon Footprint in 2020 with conventional fuel sources

In terms of a natural gas scenario, assumed to be introduced in 2016, the national carbon footprint as at 2020 taking into account the afore-mentioned Greenhouse Gas emissions reduction is shown in Diagram 02 below.

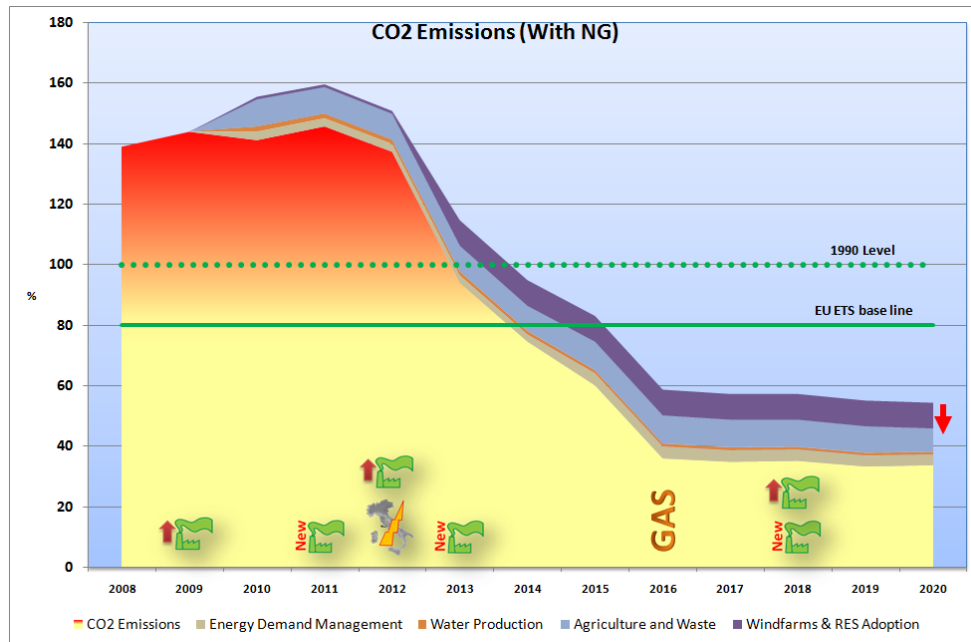


Diagram 02 - CO₂ Projected Carbon Footprint as at 2020 in Natural Gas Scenario

Finally, it is to be noted that the actions proposed in this Strategy are nationally directed – and in this regard it has made no specific reference to actions that should be directed solely towards Gozo as the

designated Eco-Island. In this regard, nevertheless, it is proposed that the process to pilot in Gozo the following actions can be initiated in 2010:

Action 37	Piloting of market incentives to enterprises which have generation capacity to covert to gas.
Action 38	Piloting of marketing incentives for improvements in energy auxiliaries and replacement of inefficient equipment.
Action 45	Piloting of Smart Street Lighting Grid for arterial roads.
Action 59	Piloting of use of public roofs for RES solar related technologies.
Action 60	Piloting of designated rehabilitated sites with appropriate infrastructure for commercial production.
Action 65	Piloting of auto gas.
Action 67	Piloting of market incentives for domestic re-use of water captured in wells.
Action 25	Piloting of introduction of CO ₂ footprint for Ministry and departments.
Action 2	Piloting of holistic knowledge, communication and information campaign.

Action Items

The following are the action items identified for each of the building blocks within the Strategy:

Securing Civil Society and Citizen Participation

Action 1	Achieving the culture change necessary through the promotion of ethical behaviour and a value system on Climate Change and environmental issues is a long-term process which would benefit if multi-party political support is secured.
Action 2	The Ministry for Resources and Rural Affairs together with appropriate civil society stakeholders establish the infrastructure and implement a sustained and continuous public awareness campaign drawing on the lessons gained in the process leading to the implementation of the Euro.
Action 3	Civil society such as Trade Unions and constituted bodies representing employers for example should assume an active leadership role in promulgating and shaping behaviour, culture, norms, work practices et al in relation to Climate Change and green issues by means of leveraging their respective reach of cohorts of society and the mobilisation of their respective resources to achieve such a goal.

Action 4	An Efficient Energy One Stop Shop Portal is set up within the Climate Change Division within the Malta Resources Authority to provide the public with access to knowledge and information relating to existing technologies, new technologies, emerging technologies, their impact in terms of €/kW saved, CO2 emissions abated, etc and to electronically integrate all government Climate Change related back-office interaction.
Action 5	The Climate Change Division together with the Building Industry Consultative Council and related professional bodies should embark upon a sustained and embracing information and education campaign directed at underlining the benefits and importance of implementing the Energy Efficiency Performance in Buildings regulations.
Action 6	An educational strategy that is based on the principles of accessibility of information, good practice, targeting specific consumer sectors, and that promotes the necessary culture change in how we look at and use energy, is designed by 2010 and aggressively embarked upon in a sustained manner as early as possible in that same year.
Action 7	A National Policy on Environment Education is designed by 2010 and introduced in 2011 as an integral part of the National Curriculum.
Action 8	The Ministry for Resources and Rural Affairs will establish a Climate Change Consultative Council which will be constituted of NGOs, the private sector, government, local government, constituted bodies, political parties and related institutions so that a permanent and robust consultative platform that assures sustained active participation of civil society is achieved. The Climate Change Consultative Council will establish a virtual network to enable entities involved in Climate Change activity to synergise their work thus securing continuity over time by allowing for new work to build on past initiatives and efforts.

Establishing an Institutional Framework for Climate Change and Building the Appropriate Human Capital

Action 9	The Strategy for Policy and Abatement measures relating to the reduction of GHG emissions will be on a rolling annual basis and will be reviewed on a three year basis with the first review to take place by the end of 2011.
Action 10	An Inter-Ministerial Committee on Climate Change and Energy under the stewardship of the Prime Minister will be constituted to ensure joined-up policy design and implementation.
Action 11	Climate Change Policy Analysts will be appointed in the Malta Transport Authority, Enemalta Corporation, WasteServ Malta Ltd, Water Services Corporation and the Malta

	Maritime Authority to ensure that policy initiatives within these entities are designed in accordance to national direction on Climate Change.
Action 12	A Climate Change Division with the mandate to “secure, both nationally and internationally, policy design and implementation that will result in adaptation to, and mitigation against, Climate Change” is to be set up within the Malta Resources Authority.
Action 13	The Climate Change Unit of the Malta Environment and Planning Authority will be consolidated within the Climate Change Division that is to be established within the Malta Resources Authority.
Action 14	The Climate Change Division will assume the status of the Designated National Authority for the United Nations Framework Convention on Climate Change which currently rests with the Malta Environment and Planning Authority.
Action 15	The Climate Change Division will have a resources capacity of 16 Full Time Equivalent staff and will focus on four areas: (a) strategy, policy and economics; (b) programme management; (c) education and communications; and (d) technology and research.
Action 16	The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead to design an R&D&I Strategy for Malta on Climate Change and Environment Technologies and Resources by 2010.
Action 17	The Climate Change Division will assume responsibility for the National Inventory for GHG emissions and will establish the strengthening of the said Inventory as a strategic objective.
Action 18	The Climate Change Division will seek to establish a vibrant Joint Implementation mechanism and in doing so will work with the private sector in order to optimise opportunities available to Malta to reap carbon credits through renewable technology initiatives carried out in third countries under the Joint Implementation mechanism.
Action 19	The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead in preparing submissions for financing under schemes such as ERDF, ESF, IEE, etc for R&D&I of indigenous solutions related to Climate Change and Environment Technologies and Resources.
Action 20	The Climate Change Division will work with knowledge institutions such as the University of Malta to see how appropriate under-graduate programmes can be strengthened by introducing modules or electives on Climate Change disciplines.

Action 21	The Climate Change Division will work with the Ministry of Education to obtain priority ranking in request for sponsorship through the Malta Government Scholarship Fund for postgraduate studies on Climate Change disciplines.
Action 22	The Climate Change Division will work with the Malta College for Arts, Science and Technology so that human capital in technical fields relating to renewable and other related technologies is built.
Action 23	The Climate Change Division will work with the appropriate government entities to introduce short term and long term internships directed towards undergraduates and graduates specialising in different disciplines relating to Climate Change in order to foster the development of such human capital.
Action 24	The Office of Fair Competition will periodically survey prices of technologies relating to energy efficiency in order to ensure that there will be no artificial obstacles that will inhibit the penetration of such technologies.
Action 25	The Government will, with effect from 2011, request each Head of Government entities to draw up and implement an annual Carbon Footprint Reduction Plan that will target, amongst others, reduction in general CO ₂ emissions, reduction in government road vehicles emissions, reduction by means of increased energy efficiency, reduction by means of application of RES technologies and reduction in water consumption.
Action 26	The Climate Change Division will monitor Carbon Footprint Reduction Plans drawn up by government entities and will annually publish the performance of each government entity against the Carbon Footprint reduction plan targets.
Action 27	The R&D&I capacity of public entities such as Enemalta Corporation and Water Services Corporation is to be strengthened to allow them to undertake applied R&D&I on processes, techniques and plant to induce efficiency measures in respect to energy and water generation / production and distribution.

Integrating the Economics of Climate Change in Policy Design and in the Identification of Abatement Measures

Action 28	The electricity sector, with particular reference to the Emissions Trading Scheme, should constitute the primary focus of concentrated efforts to reduce CO ₂ emissions and in doing so efforts will be directed towards policy and abatement measures that will render the highest level of tCO ₂ e reduction for each €1 of investment made.
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Action 29	Government recognises that, in embarking on abatement measures, it may be the case that the purchase of carbon credits from international markets may be far more cost effective than embarking on a local high cost and high maintenance investment in Malta and therefore such decisions are to be based on the net value benefit to Malta.
Action 30	The Climate Change Division working with the Economic Planning Division and other appropriate government entities is to design a strategy that sets out when and how government entities are to invest in carbon credits in order to ensure that such credits are purchased under conditions that are favourable to Malta.
Action 31	The Climate Change Division will work with the Economic Planning Policy Division to introduce a National Shadow Price for Carbon together with mechanisms for its ongoing review by July 2010.
Action 32	The Ministry of Finance, the Economy and Investment will study the possibility of grafting the economics of Climate Change onto both the national budgetary and macro and micro economic planning framework with the possibility of introducing such a planning mechanism by 1 st January 2013 – the coming into effect of Phase III of the Emissions Trading Scheme. In doing so, the Ministry will seek to strengthen the central economic and budget planning functions as appropriate.
Action 33	The Climate Change Division is to lead a Working Group constituted of the National Statistics Office and other appropriate stakeholders that will introduce, in a phased manner, a national statistical framework on Climate Change by end 2012.

Energy Abatement Measures

Energy Supply Investment

Action 34	Government re-affirms its decision to invest, during the period 2009 and 2015, in modern electricity generation plant and appropriate GHG abatement technologies subject to the essential condition that such generation technology can be converted to operate on natural gas; should a decision be reached to power the generation plants by natural gas.
Action 35	Government will reach a decision on whether to invest in the appropriate infrastructure to power the generation plants by means of natural gas only once it is conclusively shown that the implementation of this adaptation measure will provide the most appropriate return in tCO ₂ e reductions for every €1 invested – with a target implementation date set at 2015.

Action 36	Enemalta Corporation, will, following the successful closure of discussions with appropriate regulatory authorities in the EU, proceed with the implementation of one 225MW / 250 MVA submarine interconnector to be in operation by 2012.
Action 37	The Climate Change Division will study the possibility of introducing incentives to large industrial concerns to assist them in building their own energy generation plants or, where such plants already exist, to improve the technology on the basis that (a) such distributed generation plants are designed to Best Available Technology; and (b) that such distributed generation plants are capable of conversion to natural gas.
Action 38	Industrial concerns should review their energy auxiliaries and replace inefficient equipment by new advanced technology to, on the one part, reduce their energy consumption, and on the other part, to act as a GHG abatement measure.

Energy Demand Management

Action 39	The Automated Revenue Management Systems Ltd, will seek to nationally implement the Smart electricity and water meter grid by June 2011.
Action 40	Government reconfirms its policy decision that the price of electricity generated and distributed by Enemalta Corporation should reflect the true cost – excluding inefficiencies that are within the power of management to address – so that behavioural change in terms of consumption patterns and of investment in alternative technologies respectively is induced.
Action 41	The Climate Change Division will study the possibility of replacing the current energy benefit support policy, in part or in whole, by a policy that will provide households benefiting from the existing scheme with energy efficient white goods. If introduced, such a policy will be directed to be equivalent in terms of support to that which is currently received by households as compensation benefit, in part or in whole, would stem from reduced energy bills due to the use of more efficient energy appliances.
Action 42	Government will continue to support the Business Advisory Scheme introduced in the 2009 National Budget to support industry and enterprise to undertake energy audits.
Action 43	The Ministry for Infrastructure, Transport and Communications will introduce differentiated tariffs to encourage the shifting of consumption demand from peak times to non-peak times during base load once the Smart electricity and water meter grid is introduced nationally.

Action 44	The Ministry for Resources and Rural Affairs will implement the EU Directive on the Ban of Incandescent Lights – with the 100w incandescent bulb being banned as from 1st September 2009 with the phasing out of incandescent lights to be concluded on 1st September 2012 with the ban of the 25w bulb.
Action 45	The Climate Change Division together with the Malta Transport Authority, Roads Infrastructure Directorate, the Association of Local Councils and Enemalta Corporation will study the introduction of a Smart Street Lighting Grid for arterial roads.
Action 46	The Roads Infrastructure Directorate will continue to introduce passive lightening technologies and alternative energy power for road infrastructure such as traffic lights where so appropriate.
Action 47	The Climate Change Division and the Ministry for Infrastructure, Transport and Communication will closely follow the work by the EU Commission on ICT and an Energy Efficient and Low Carbon Economy and will implement measures that will have a positive impact on the reduction of CO ₂ emissions as they arise.
Action 48	<p>The Malta Standards Authority will:</p> <ul style="list-style-type: none"> (a) continue to transpose into local legislation the Framework Directive for the Eco Design of Energy Using Products and will support this activity by disseminating knowledge and information on this initiative to the extent possible; (b) together with the Climate Change Division promulgate the Eco-Management and Audit Scheme nationally as well as design appropriate measures to assist entities to obtain the EMAS accreditation.
Action 49	The Climate Change Division will study the introduction of an eco-contribution on non low energy classified appliances in order to facilitate the national uptake of A+ to A+++ energy class appliance.
Action 50	The Government will extend further as appropriate the measure taken in the 2009 budget directed at introducing energy efficiency information on all domestic appliances.

Energy Performance of Buildings

Action 51	The Malta Resources Authority will review the implementation of the Energy Efficiency Performance in Buildings framework to identify lessons learnt and to make the appropriate changes within the parameters of the final decision reached by the Commission on the Recast proposal.
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Action 52	The Malta Resources Authority will participate actively in the discussions underway within the EU Commission on the Recast proposal on the Energy Efficiency Performance in Buildings Directive with a view to influence the outcome of such discussions to the extent possible.
Action 53	The Climate Change Division will hold discussions with the University of Malta to (a) determine how undergraduate course content can be strengthened in terms of energy efficiency building design; and (b) introduce post-graduate programmes specialising in the discipline within the Mediterranean generally, and Malta specifically.
Action 54	The Climate Change Division together with appropriate entities will assess how best to implement a policy that would see all new development as well as re-construction works on buildings are constructed with the appropriate plumbing installation works that will allow for the seamless plugging-in of solar related alternative technology equipment.
Action 55	Government will constitute a team of experts to draw up by 2011 a National Policy for Zero Energy Buildings.

Stimulating the Penetration and Use of Renewable Energy Sources

Action 56	Government will seek to achieve, as a minimum, a 4% reduction in energy generated by fuel oil by means of alternative renewable forms of solar technologies.
Action 57	Government will incentivise, as appropriate, the use of all forms of solar energy technologies - directing, however, market incentives to those forms of solar energy technologies that will result in the highest tCO ₂ e reduction for each €1 invested in such RES solar technology.
Action 58	Government will continue with the current strategy of financing in part the capital costs of RES solar technology for domestic users and will introduce as appropriate a market incentive mechanism for industrial and enterprise users that is significantly more attractive to that in place today.
Action 59	Government will consider the use of surface areas of public buildings for use for the accelerated deployment of Photo Voltaic technology.
Action 60	Government will consider the rehabilitation of appropriate land sites for the deployment of RES technologies for use by industrial concerns, with such sites being made available with appropriate connectivity to the grid.

Action 61	Government will consider extending the right of servitude to include the installation of solar water heaters and to provide households with no access to surface area on which to install Photo Voltaic technology with access to the surface area of public buildings.
Action 62	Government will continue to consider on-shore and off-shore wind technology as an important RES technology in so far that such an abatement measure is technically possible within the topographical constraints of Malta's terrain and sea area.
Action 63	Government will assess the potential application and use of low grade RES Geothermal technology.
Action 64	Government will continue to facilitate as appropriate the expansion of the Bio-fuel market subject that this is carried out within the constraints of the EU sustainability criteria for Bio-fuel and with such focus directed towards secondary Bio-fuel sources such as recycled domestic and industrial oil waste.
Action 65	The Malta Resources Authority will work with the appropriate private stakeholders to introduce autogas as an accessible and affordable substitute for fuel for vehicle drivers.

Securing Effective Management of Water and Water Production

Action 66	Government will, with effect from 1st July 2010, repeal the current practice not to invoke legal provisions that mandate that buildings must have rainwater capture reservoirs and will ensure that existing legal provisions are enforced.
Action 67	Government will consider the introduction of a fiscal incentive directed at domestic users to promote the integration of water captured in wells with the plumbing system for secondary use.
Action 68	The Water Services Corporation will continue to review the technology of its Reverse Osmosis plants to apply innovation and introduce improvement through technical design modifications to reduce further the energy utilised for the production of potable water.
Action 69	The Water Services Corporation will continue to review the water transfer and distribution network to apply innovation and introduce improvement through technical and design modifications to reduce the demand per cubic meter of water produced and distributed.

Agriculture and Waste Abatement Measures

Action 70	The Ministry for Resources and Rural Affairs will proceed with the implementation of the Agricultural Waste Management Plan with an objective of generating 33,000MWh annually and removing 50% of nitrogen in manure.
Action 71	The Ministry for Resources and Rural Affairs will continue to reinforce the growing success of the programmes for the collection and recovery of recyclable municipal solid waste.
Action 72	The Ministry for Resources and Rural Affairs will seek, by 2015, to broaden the recovery process to include separation collection and subsequent recovery of up to 36,000 tonnes of recyclable waste and 35,000 tonnes of clean organic fraction.
Action 73	Government will seek, by 2013, to build the appropriate infrastructure to enable the thermal treatment of waste.
Action 74	Government will seek to pursue the use of treated effluents for secondary purposes by industry subject that such use takes place outside of the groundwater zone and the distribution network provides value for money.
Action 75	WasteServ Malta Ltd will continue to invest to extract malodorous and noxious gas emissions from closed landfills such as Magħtab and Qortin landfills.
Action 76	WasteServ Malta Ltd will continue to invest to cap and extract gases from the Ta' Zwejra and Għallis landfills.

Transport Abatement Measures

Action 77	The Malta Transport Authority will, at the first instance, seek to resolve traffic bottlenecks in critical road networks by considering options such as variable lanes, intelligent lights, traffic information et al and will only embark on the expensive capital construction of junctions as a last policy option choice.
Action 78	The Malta Transport Authority will consider, where so appropriate, introducing a middle third lane for alternate bi-directional use as a means to reduce congestion.
Action 79	The Malta Transport Authority will consider the introduction of flexible bi-directional lane management on arterial roads that can feasibly and cost effectively accommodate such a concept in order to reduce traffic congestion during peak hours.

Action 80	The Malta Transport Authority will consider the introduction of intelligent traffic lights as and where appropriate.
Action 81	The Ministry for Infrastructure, Transport and Communications will consider the setting up of a traffic information centre, if so possible with private stakeholders, as a means to reduce traffic congestion by keeping the public updated of the traffic flow situation and re-routing as appropriate.
Action 82	Local government and government entities are to be encouraged to schedule non-urgent and non-critical repair and maintenance works in non traffic peak hours in order to remove 'artificially' created bottlenecks.
Action 83	The Office of the Prime Minister and the Ministry of Education will discuss, as appropriate, the staggering of official working and school hours with the appropriate unions as a means to alleviate congestion at certain hours of the day.
Action 84	Government will continue to promulgate the implementation of tele-working; a measure which should be adopted by the private sector.
Action 85	The Ministry for Infrastructure, Transport and Communications will continue to proceed with the implementation of public transport reform.
Action 86	The Ministry for Infrastructure, Transport and Communications will continue to proceed to build a network of water taxis in the Grand Harbour and Sliema Creek areas respectively.
Action 87	All means of public transport are to be equipped with remote telemetry devices so as to provide real-time information on the estimated time of arrival at designated stops so as to provide a more efficient integrated public transportation system and in doing so encouraging increased use of public transportation.
Action 88	The Ministry for Infrastructure, Transport and Communications will continue to proceed with its strategy to introduce a new fleet of buses of different passenger capacities in line with the type of route served.
Action 89	The Malta Transport Authority will encourage further take-up of electrically powered taxis as currently servicing the Valletta Park and Ride system.
Action 90	The Malta Transport Authority and the Ministry for Gozo, consistent with the Government's strategy to establish Gozo as the Eco-Island, will seek to introduce buses with the highest

	level of eco-friendly automobile standards in Gozo by 2016.
Action 91	The Ministry for Infrastructure, Transport and Communications will seek to introduce, as and where appropriate, further park and ride systems to service major town shopping and other business communities in order to reduce congestion and unnecessary mileage in the search for parking.
Action 92	The Malta Transport Authority will consider and assess the introduction of equipping heavy commercial vehicles with telemetry devices to measure CO ₂ emissions in order to regulate emissions against maximum thresholds and to ensure compliance as appropriate.
Action 93	The Malta Transport Authority will continue to closely follow development in the EU vis-à-vis hydrogen vehicles and the supporting filling network.
Action 94	The Malta Transport Authority and the Climate Change Division will carry out a study, by end 2010, to determine whether ICT can act as an enabler for a successful car pooling scheme and recommend next steps in this regard.
Action 95	The Malta Transport Authority will continuously liaise with appropriate stakeholders to determine how cycling, as a form of commuting, can be supported further and implement measures as and where appropriate.
Action 96	The Malta Transport Authority, with the assistance of the Climate Change Division, will review and analyse viable electrical and alternative modes of vehicle transport and establish a framework directed to promulgate the up-take of alternative technology powered vehicles.

Categorisation of Actions

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
Securing Civil Society and Citizen Participation								
1	High	As appropriate	Local	Policy	None	No	MRRA	
2	High	Underway	Local	Knowledge Support	Low	As approp.	CCD	
3	High	Immediate	None	Trade Unions, Political Parties, Civil Society	Unknown	No	Civil Society	
4	Medium	By end 2010	End-use efficiency and energy services (Directive 2006/32/EC)	Knowledge support	Low	Yes	CCD	
5	High	As appropriate	Energy Performance Building Directive (Directive 2009/91/EC)	Civil Society	Low	No	CCD; BICC	
6	High	2011	Local	Knowledge Support	Low	Yes	CCD	
7	High	2011	Local	Knowledge Support	Low	Yes	MoE; CCD	
8	High	2009	None	Civil Society	None	No	CCD	
Establishing and Institutional Framework for Climate Change and Building the Appropriate Human Capital								
9	High	End 2011	Local	Policy		No	CCD; CCCC	
10	High	Immediate	Local	Policy	None	No	OPM	
11	High	Immediate	Local	Policy	Low	No	MRRA; CCD; WSC; MTA; EMC; WasteServ; MMA	
12	High	Immediate	Local	Policy	Medium	No	MRRA	
13	High	Immediate	Local	Policy	None	No	OPM; MRRA	
14	High	As appropriate	Local	Regulatory	Low	No	OPM; MRRA	
15	High	Immediate	Local	Policy	Medium	No	MRRA; MRA	
16	Medium	By end 2010	Local	Research	Low	Yes	CCD; MCST	
17	High	Immediate	UNFCCC Mechanism for monitoring Community GHG (Decision 280/2004/EC)	Regulatory	Medium	Yes	CCD	
18	Medium	As appropriate	Kyoto Protocol Annex I Party	Regulatory	Low	Yes	CCD; Private Sector	
19	High	As appropriate	Local	Research	Low	No	CCD	
20	Medium	As appropriate	Local	Capacity Building	Low	No	CCD; UoM	
21	Medium	As appropriate	Local	Capacity Building	Low	No	CCD; UoM; MoE	
22	Medium	As appropriate	Local	Capacity Building	Low	No	MCAST; CCD	
23	Medium	As appropriate	Local	Capacity Building	Low	No	Not applicable	
24	High	As appropriate	Local	Regulatory	None	No	OFC	
25	High	2011	Local	Policy	Medium	Yes	CCD; Government entities	Not estimated

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
26	High	2012	Local	Policy	None	Yes	CCD; Government entities	Not estimated
27	Medium	Ongoing	Local	Capacity Building	Low	Yes	CCD; WSC; Enemalta	
Integrating the Economics of Climate Change in Policy Design and in the Identification of Abatement Measures								
28	High	Immediate	Local	Policy	None	No	CCD; Appropriate entities	
29	High	As appropriate	Emissions Trading Scheme (Directive 2003/87/EC)	Policy	Unknown	Yes	CCD	
30	High	Immediate	Emissions Trading Scheme (Directive 2003/87/EC)	Policy	Unknown	Yes	CCD	
31	High	Immediate	Local	Policy	Low	Yes	CCD; EPD	
32	High	End of 2012	Local	Policy	Unknown	Yes	MFEL; CCD	
33	High	End of 2012	Local	Policy	Low	Yes	CCD; NSO; ETC	
Energy Abatement Measures								
Energy Supply Investment								
34	High	End of 2011 End of 2013	Emissions Trading Scheme (Directive 2003/87/EC) Emissions from large combination plant (Directive 88/609/EEC)	Infrastructure	Sunk Cost: High (estimate €180m)	No	EMC	200 Gg equiv of CO ₂ per annum
35	High	End of 2015	Emissions Trading Scheme (Directive 2003/87/EC)	Infrastructure	Sunk Cost: High (estimate €390m)	Underway	EMC	Approx 30% on conventional power generation
36	High	As appropriate	Emissions Trading Scheme (Directive 2003/87/EC) Emissions from large combination plant (Directive 88/609/EEC)	Infrastructure	Sunk Cost: High (estimate €200m)	Underway	EMC	Not estimated
37	Medium	End of 2013	Emissions Trading Scheme (Directive 2003/87/EC)	Infrastructure	Unknown	Yes	MFEL; CCD; Private Sector	Not estimated
38	Medium	As appropriate	Local	Technology upgrade	Unknown	No	Private Sector	Not estimated
Energy Demand Management								
39	High	June 2011	End-use efficiency and energy services (Directive 2006/32/EC)	Infrastructure	Sunk Cost: High (estimate €70m)	No	Utilities	Estimated 12 Gg
40	High	As appropriate	Local	Policy	On end user	As appropriate	MRA; EMC	Not estimated
41	High	Subject to assessment	Local	Policy	Neutral	Yes	MFEL; MRA; CCD	Not estimated

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
42	High	Ongoing	Market Incentive	ERDF Energy Grant		No	MFEI; ME	Estimated 25 Gg in 2015 22 Gg in 2020
43	Medium	Following national roll-out of Smart Meters estimated June 2011	End-use efficiency and energy services (Directive 2006/32/EC)	Infrastructure	Neutral	Yes	MRA; Utilities	Not estimated
44	Medium	Ongoing	End-use efficiency and energy services (Directive 2006/32/EC)	Policy	On end user	No	MRA; CCD	Estimated 21 Gg in 2010 12 Gg in 2015 11 Gg in 2020
45	High	By 2015	End-use efficiency and energy services (Directive 2006/32/EC)	Infrastructure		Underway	MITC; Local Government; EMC	Estimated 0.84 Gg in 2010 1.91 Gg in 2015 1.71 Gg in 2020
46	Included in Action 44							
47	Medium	As appropriate	Mobilising ICT to facilitate transition to an energy efficient, low carbon economy (COM (2009) 111)	Infrastructure	Unknown	As appropriate	MITC; CCD	Not estimated
48	Medium	As appropriate	Local	Regulatory	Unknown	Underway	MSA; CCD	Not estimated
49	High	As appropriate	End-use efficiency and energy services (Directive 2006/32/EC) Electricity production from RES (Directive 2001/27/EC) Energy labelling of household appliances (Directive 2003/66/EC (refrigerators – freezers) 2002/40/EC (electric ovens) 2002/31/EC (air-conditioners) 99/9/EC (dishwashers) 96/89/EC (washing machines))	Market Incentive	On end user	No	MRA; CCD	Rebates on energy efficient domestic scheme (now expired) estimated to lead to 4.2 Gg CO2 equiv reduction in 2010, decreasing to 2.14 Gg in 2020
50	High	As appropriate	End-use efficiency and energy services (Directive 2006/32/EC)	Knowledge Support	On commercial entity	Yes	CCD	Not estimated
Energy Performance of Buildings								
51	High	As appropriate	Energy performance of buildings (Directive 2002/91/EC)	Regulatory	Unknown	Yes	MRA; CCD; BICC; Professional Bodies	Not estimated

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
52	High	As appropriate	Energy performance of buildings (Directive 2002/91/EC)	Regulatory	Unknown	Yes	MRA; CCD; BICC; Professional Bodies	Not estimated
53	Medium	As appropriate	Local	Capacity Building	Low	No	CCD; UoM	Not applicable
54	Medium	As appropriate	Energy performance of buildings (Directive 2002/91/EC)	Regulatory	On end user	Yes	MEPA; CCD	Not estimated
55	High	2011	Energy performance of buildings (Directive 2002/91/EC)	Regulatory	Medium	Yes	MRA; BICC; MEPA; Constituted Bodies	
Stimulating the Penetration and Use of Renewable Energy Sources								
56	High	Immediate	Energy Production form RES (Directive 2006/32/EC)	RES Technology	Not estimated	Yes	MRA; CCD	If 4.35% electricity output is generated by PV / RES annual CO ₂ reduction estimated at 42 Gg
57	High	Immediate	Energy Production form RES (Directive 2006/32/EC)	RES Technology	Not estimated	Yes	MRA; CCD	Solar heaters estimated 11 Gg CO ₂ Equiv in 2010 and 13 Gg CO ₂ equiv 2015 / 2020 Electricity generated by micro-RES estimated at 1 Gg CO ₂ equiv / year for period 2005 – 2008 Energy saving measures in state schools today estimated at 0.15 Gg CO ₂ equiv in 2010 increasing to 0.3 Gg equiv in 2020
58	High	Immediate	Local	Market incentive	Not estimated	Yes	MRA; CCD; EMC	Not estimated
59	Medium	As appropriate	Local	Market incentive	Not estimated	Yes	MRA; CCD	If 4.35% electricity output is generated by PV / RES minimum CO ₂ reduction estimated at 42 Gg
60	High	As appropriate	Local	Market incentive	Not estimated	Yes	MRA; CCD; MEPA	Not estimated
61	Medium	As appropriate	Local	Regulatory	On Landlord	Yes	MRA; CCD	Not estimated

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
62	High	As appropriate	Energy Production form RES (Directive 2006/32/EC)	RES Technology	Government estimated costs: €3,520,000 Costs by developers: Offshore 45MW wind farm estimated at €228m - €335m Onshore 10MW wind farm estimated at €18.5m to €25.5m	Underway	MRRA; MRA	Offshore estimated at 80 Gg Onshore estimated at 25 Gg
63	Low	By end 2011	Energy Production form RES (Directive 2006/32/EC)	RES Technology	Not estimated	Yes	MRRA; MRA	Not estimated
64	Medium	Ongoing	Liquid fossil fuel replacement (Directive 2003/30/EC)	RES Technology		No	MRA; CCD	2005 estimated 0.0148% of CO ₂ vis-à-vis fuel used for transport
65	Medium	Ongoing	Liquid fossil fuel replacement (Directive 2003/30/EC)	RES Technology		No	MRA; CCD	2005 estimated 0.0148% of CO ₂ vis-à-vis fuel used for transport
Securing Effective Management of Water and Water Production								
66	High	Ongoing	Local	Regulatory	On end user	No	MEPA; CCD	Not estimated
67	High	As appropriate	Local	Market incentive	To be determined	Yes	MRA; CCD	Not estimated
68	High	Ongoing	End use efficiency and energy services (Directive 2006/32/EC)	Technology and Research		As appropriate	WSC	Upgrading project initiated in 2007 and to be completed in 2009 is estimated to result in a reduction of 20% in energy consumption
69	High	Ongoing	End use efficiency and energy services (Directive 2006/32/EC)	Technology and Research	Not estimated	As appropriate	WSC	Estimated 24 Gg in 2010 14 Gg in 2015 12 Gg in 2020
Agriculture and Waste Abatement Measures								

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
70	High	Ongoing	Energy production from RES (Directive 2006/32/EC) Directive on Waste (Directive 2006/12/EC)	RES Technology	Sunken Cost: EU Funding 2007 – 2013: Malta North Plant: €45m Gozo Plant: €16m	Underway	WasteServ; EMC	Bio-gas from Sant Antnin Treatment Plant alone is estimated to lead to savings of 62 Gg in 2010 57 Gg in 2015 57 Gg in 2020
71	High	Ongoing	Directive on Waste (Directive 2006/12/EC)	Policy	Sunken Cost: EU Funding 2004 – 2006: €5.93m EU Funding 2007 – 2013: €1.5m	As appropriate	WasteServ	Not estimated
72	High	Ongoing	Directive on Waste (Directive 2006/12/EC)	Infrastructure	Sunken cost: Cohesion Fund 2004 – 2006: €16.7m Local Funding: €16.6m	Yes	WasteServ	Not estimated
73	High	By 2013	Directive on Waste (Directive 2006/12/EC)	Infrastructure	Sunken cost: Estimated at €108m	Yes	WasteServ	Bio-gas from Sant Antnin Treatment Plant alone is estimated to lead to savings of 62 Gg in 2010 57 Gg in 2015 57 Gg in 2020
74	High	As appropriate	Electricity production from RES (Directive 2001/77/EC)	Infrastructure	Sunken cost: Not known	No	WasteServ; WSC	GHG savings / yr estimated at 46Gg CO ₂ equiv on CH ₄ combustion savings, replacement of fuel grid electricity and CO ₂ emissions from combustion plant

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
75	High	Underway	Landfill Directive (Directive 1999/31/EC)	Infrastructure	Sunken Cost: EU Funding 2004 – 2006 €8.8m (aerial emissions) EU Funding 2007 – 2013: €28m (rehabilitation including capping)	Underway	WasteServ	GHG savings from CH ₄ estimated at 52.5 Gg equiv in 2010 decreasing to 26.3 Gg CO ₂ equiv in 2020
76	High	Underway	Landfill Directive (Directive 1999/31/EC) Directive on Waste (Directive 2006/12/EC) Electricity production from RES (Directive 2001/27/EC) Kyoto Protocol project mechanism (Directive 2004/101/EC)	Infrastructure	Sunken Cost Local Funding 2010 – 2012: €4.5m	Yes	WasteServ	GHG savings estimated at 14 Gg CO ₂ equiv in 2010, 36.72 Gg CO ₂ in 2015 and 24.76 Gg CO ₂ equiv in 2020 from CH ₄ combustion, replacement of fuel use, etc
Transport Abatement Measures								
77	High	Underway	Local	Infrastructure	Sunk cost: High	Yes	MTA; MITC	Not estimated
78	High	As appropriate	Local	Infrastructure	Sunk cost: High	Yes	MTA; MITC	Not estimated
79	High	As appropriate	Local	Technology and Infrastructure	Sunk cost: Medium	Yes	MTA; MITC	Not estimated
80	Medium	As appropriate	Local	Technology	Medium	Yes	MTA; MITC	Not estimated
81	Medium	As appropriate	Local	Technology	Medium	Yes	MTA; MITC	Not estimated
82	Medium	Initiate 2010	Local	Policy		No	Government; Local Councils	Not estimated
83	Medium	Initiate 2010	Local	Policy		No	Government; Unions	Not estimated
84	Medium	Initiate 2010	Local	Policy	Neutral	No	OPM; Government entities; Private Sector	Not estimated
85	High	Underway	Local	Infrastructure	High	As approp.	MITC; Private Sector	Not estimated
86	High	Underway	Local	Infrastructure	Low / Medium	Underway	MITC; Private Sector	Not estimated
87	High	Underway	Local	Technology	Medium	Underway	MTA; MITC;	Not estimated

	Priority	Implementation	Requirement	Type	Cost	Requires further study	Owner	Emissions Reduction
88	High	Underway	Local	Infrastructure	High	Underway	MTA; MITC; Private Sector	Not estimated
89	High	Underway	Local	Technology	On owner	Underway	MTA; MITC; Private Sector	Not estimated
90	High	As appropriate	Local	Technology	High	Yes	MTA; MITC; MoG	Not estimated
91	High	As appropriate	Local	Infrastructure	Medium	Yes	MTA; MITC; Private Sector	Not estimated
92	High	Initiate 2010	Local	Regulatory	On owner	Yes	MTA; MITC; Private Sector	Not estimated
93	Low	As appropriate	Local	Technology	High	Yes	MTA; MITC	Not estimated
94	Medium	2010	Local	Technology	Low	Yes	MTA; MITC; CCD	Not estimated
95	Low	Underway	Local	Infrastructure	Not known	Underway	MTA; MITC; CCD	Not estimated
96	High	Initiate 2010	Local	Technology and Market Incentive	To be estimated	Yes	MTA;MITC;CCD	Not estimated

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
01 Secure multi-party political support	High	MRRA												
02 Intensify Public Awareness Campaign	High	CCD												
04 Efficient Energy One Stop Shop	Medium	CCD												
06 Educational Strategy	High	CCD												
07 National Policy on Environment Education	High	MoE CCD												
08 Constitute Climate Change Consultative Council	High	CCD												
09 Review National Strategy	High	CCD CCCC												
10 Setup Inter-Ministerial CC Committee	High	OPM												
11 Introduce policy design and project identification framework	High	MRRA; CCD; WSC; MTA; EMC; MMA; Wasteserv												
13 Setup Climate Change Division within MRA	High	OPM MRRA												
14 Designated National Authority	High	OPM MRRA												
16 Design Research & technology innovation strategy on CC	Medium	MRRA; MRA												
17 Strengthen GHG Inventory system under CCD	High	CCD												
18 Ensure R&D&I strategy directed at the right technologies	Medium	CCD; Private Sector												
19 Seek financing for R&D&I	High	CCD												
20 Undergraduate course content on CC disciplines	Medium	CCD JoM												
21 Priority ranking for CC scholarships	Medium	CCD MoE JoM												
22 Introduce MCAST courses on RES	Medium	MCAST CCD												
23 Internships in CC	Medium	Not applicable												
24 Survey Prices of Energy Efficient technologies	High	OFC												
25 Improved CC targets for heads of government entities	High	CCD; Gov Entities												
26 CC Target Attainment list for all government entities	High	CCD; Gov Entities												
27 Build R&D&I capabilities in Utilities	Medium	CCD; WSC; Ensmalta												
28 Direct efforts towards most "effective" abatement efforts	High	CCD App Entities												
31 Establish a Shadow Price of Carbon	High	CCD EPD												
32 Graft economics of CC on to budgetary framework	High	MFEI; CCD												
33 Introduce appropriate statistical CC domains	High	CCD; NSO; ETC												
34 Ensure additional power plants operational	High	EMC												
35 Complete Feasibility study re Natural Gas	High	EMC												
36 Sub-sea electricity inter connector	High	EMC												
37 Incentive Scheme towards heavy industrial consumers	Medium	MFEI; MRA; Private Sector												
38 Review of energy auxiliaries for major industrial installations	Medium	Private Sector												
39 Implementation of Smart Meters	High	Utilities												
40 Price of electricity to reflect true cost	High	MRA; EMC												
41 Policy for financing of Replacement of white/brown goods	High	MFEI; MRA; CCD												
42 Business Advisory Scheme	High	MFEI MRA												

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
43 Differentiated Tariffs	Medium	MRA Utilities												
44 Incandescent Lights	Medium	MRA CCD												
45 Smart Street Lighting Grid	High	MITC Local Government												
47 Follow EU Commission re mobilising ICT to facilitate energy efficiency	Medium	MITC CCD												
48 Disseminate information regarding Eco Design of Energy Using Products	Medium	MSA CCD												
49 Facilitate uptake of A+ and A++ appliances	High	MRA CCD												
50 Energy Efficiency on all domestic and commercial appliances	High	CCD												
51 Energy Efficiency Performance in Buildings Framework	High	MRA; BICC; CCD; Prof Bodies												
52 Participate actively in recast proposal for EEPBF	High	MRA; BICC; CCD; Prof Bodies												
54 Seamless plug-in of RES	Medium	MEPA; CCD												
55 National Policy for Zero Energy Buildings	High	MRA; BICC; MEPA; Constituted												
56 Strategy for uptake of solar energy abatement measures	High	MRA CCD												
57 Strategic Initiative for solar technology penetration	High	MRA CCD												
58 Capital financing and FIT for PV technology	High	MRA CCD EMC												
59 Utilise roofs of public buildings for PV	Medium	MRA CCD												
60 Designate land sites suitable for alternative technology	High	MRA CCD MEPA												
61 Right of Servitude and alternative surface area for RES	Medium	MRA CCD												
62 Wind technology	High	MRRA MRA												
63 Geothermal systems	Low	MRA CCD												
64 Continue to expand bio-fuel market	Medium	MRA CCD												
65 Introduce Autogas	Medium	MRA CCD												
66 Enforce Legislation mandating rainwater capture reservoirs or wells	High	MEPA CCD												
67 Introduce incentive scheme to integrate well water	High	MRA CCD												
68 Review RO technology	High	WSC												
69 Review water transfer and distribution network	High	WSC												
70 Agriculture Waste Management Plan	High	WasteServ Ltd EMC												
71 Collection and recovery of recyclable municipal solid waste	High	WasteServ Ltd												
72 Broaden recyclable waste scheme	High	WasteServ Ltd												
73 Introduce Thermal treatment of waste	High	WasteServ Ltd												
74 Use treated effluents for irrigation	High	WasteServ Ltd WSC												
75 Continue with investment to extract gas from landfills	High	WasteServ Ltd												
76 Continue with investment to cap and extract gases from Hazardous landfills	High	WasteServ Ltd												
77 Bottleneck junctions given priority in road infrastructure upgrade programme	High	MTA MITC												
78 Reconsider policy of building single lane roads	High	MTA MITC												
79 Consider introduction of traffic direction variable lanes	High	MTA MITC												
80 Introduce intelligent traffic lights	Medium	MTA MITC												

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
81 Setup traffic information centre	Medium	MTA MITC												
82 Schedule repair and maintenance of roads in non-peak hours	Medium	Government Entities Local Gov.												
83 Consider staggered hours for Government employees & Schools	Medium	Government Unions												
84 Encourage more widespread use of teleworking	Medium	OPM; Gov Entities; Private Sector												
85 Introduce inter-community transportation	High	MITC; Private Sector												
86 Introduce water taxis	High	MITC; Private Sector												
87 Equip public transport with remote telemetry devices	High	MTA MITC												
88 Renovate and diversify Public Transport fleet	High	MTA; MITC; Private Sector												
89 Further introduction of electrically powered taxis	High	MTA; MITC; Private Sector												
90 Consider introducing Electric or LPG powered buses in Gozo	High	MTA MITC Min. for Gozo												
91 Introduce further park and ride schemes	High	MTA; MITC; Private Sector												
92 Equip heavy Commercial vehicles with remote telemetry	High	MTA; MITC; Private Sector												
93 Hydrogen powered vehicles	Low	MTA MITC												
94 Car Pooling	Medium	MTA MITC CCD												
95 Cycling	Low	MTA MITC CCD												
96 Maintain watching brief on the development of electric vehicles	High	MTA MITC CCD												

01. Introduction

In June 2008, the Ministry for Resources and Rural Affairs (MRRA) appointed a Climate Change Committee to assist the Ministry to draw up a National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gas Emissions.

The Climate Change Committee (CCC) presented its report to the Minister for MRRA on 12th December 2008. Recommendation 01 of the report proposed that the report “should be published to stimulate an intensive discussion and consultation process – which would act as the spur for the sustained dissemination of knowledge and participation in this important policy domain.”

The report was formally placed in the public domain on 15th January 2009 at a press conference which saw the launch of the public consultation process. The draft strategy was also tabled in Parliament and was the subject of a parliamentary debate.

To seek to achieve the broadest dissemination possible in order to secure a sustained consultation process the communication campaign embarked upon by MRRA encompassed:

- the holding of workshops directed at journalists and Non Government Organisations (NGOs).
- the holding of public discussions in localities.
- the holding of one-to-one meetings with individuals and entities who requested meetings with the CCC.
- the placement of bill boards broadcasting the ‘climatechange@gov.mt’ electronic mail forum.
- participation in public conferences where so invited.
- meetings by the CCC with interested parties seeking to discuss the report.
- participation on TV and radio programmes.

The process of consultation was concluded on 13th March 2009. In all, MRRA received 12 formal documents and various electronic mail submissions.

In terms of the formal feedback received this is categorised as follows:

Political Parties	Partit Nazzjonalista
Government Institutions	Malta Environment and Planning Authority
NGOs	Friends of the Earth
	Din L-Art Helwa
Constituted Bodies	Enemalta Professional Officers Union
	Chamber of Engineers
Institutions	Kummissjoni Ambjent Arcidjocesi ta’ Malta
Private Sector	Attard Services Ltd
Private citizens	3 responses.
Other	EkoSkola.

The formal and informal (articles in newspapers) feedback arising from the consultation process was in the main positive in respect of both the rationale underpinning the report as well as the recommendations presented. In general the following were the arguments raised in the consultation process:

01. Agreement, in the main, with the recommendations proposed. A number of respondents in this cohort submitted new recommendations or priority emphasis vis-à-vis the recommendations presented in the report. This cohort of the respondents constituted by far the majority of the feedback received.
02. A small cohort of respondents criticised the report for avoiding the scientific debate on Climate Change. It is pertinent to note that this criticism was stated by respondents who disagree that Climate Change is induced by human behaviour and who argue that the world is undergoing a normal process of evolution and change as experienced by the planet over the millennia. The argument put forward is that policy making relating to Climate Change departs from a false starting point and Government should concentrate on 'real' and more pressing priorities.
03. A small cohort of respondents criticised the report for not addressing adaptation issues on policy sectors that are affected by Climate Change – such as the impact of rising sea levels on tourism; the impact of the rising of sea temperature on fish stocks; et al.
04. That the report was too technically oriented and drafted in a 'language' that rendered it difficult to secure universal dissemination and that this discouraged stakeholders and participants in the consultation process from partaking in the debate. In particular, the discussion on the economics of Climate Change and the analysis of the direct costs of exceeding proposed emission obligations and targets in energy and transport were seen, by some, to be both theoretical and technically difficult to follow.
05. That the process of consultation should be on-going and should not terminate once a position on a strategy for Climate Change is adopted by Government. Emphasis was placed on the need to ensure that the consultation process should continue both with regards to the design of policy measures as well as during the implementation of the strategic initiatives adopted by Government.
06. That the recommendations proposed should be prioritised and where so possible be more specific with regards to time frames as well as the financial costs of the recommendations presented in the report.
07. A small cohort of respondents underlined that the fact that the report failed to recommend the enactment of a Bill on Climate Change demonstrated a lack of readiness to place government under an accountability framework directed to ensure that government delivers on matters relating to Climate Change.
08. There was unanimous agreement that Climate Change as a national issue should be above politics and that political parties should not politicise the matter.

The Strategy is designed around three horizontal thrusts:

The inculcation of a culture that recognises the importance and responsibilities relating to Climate Change by means of securing the participation of all stakeholders within the Maltese polity.

The establishment of a governing framework for Climate Change that will ensure that Climate Change as a national agenda issue is supported by the necessary sustained critical mass.

The importance of underpinning decisions relating to the design of policy and the identification of abatement measures in order to secure Greenhouse Gas (GHG) emissions reductions with the economics of Climate Change.

Diagram 03 below depicts the building blocks of the National Strategy for Policy and Abatement Measures relating to Greenhouse Gas Emissions.

Diagram 03 - The Building Blocks of the National Strategy for Policy and Abatement Measures Relating to Greenhouse Gas Emissions



In relation to specific policy and abatement measures the Strategy targets a number of vertical sectors. These are: (a) Energy; (b) Water; (c) Agriculture; and (d) Transport which respectively are responsible for the overwhelming majority of CO₂ emissions in Malta.

02. Securing Civil Society and Citizen Participation

Mitigating against and adapting to Climate Change requires a cultural shift in people's mindsets – in that responsibility for securing our climate is a responsibility that each and every one has to assume. Instilling such a change in mentality and behaviour demands sustained communications targeted across all strata of society. Moreover, and in the long term of far more strategic importance, is the design of an educational milieu that promotes ethical behaviour and moulds a value system in today's and tomorrow's future citizens in relation to Climate Change.

Above all, the issue of Climate Change must be above politics. Whilst it is understood that political parties may fail to agree on the specific details of a particular policy or abatement measure, common ground must be found with regards to the policy thrusts and measures that Malta is to adopt in terms of reducing its CO₂ and other GHG emissions.

It is in the interest of Malta and Maltese citizens that political parties should, on this matter, rise above partisan politics and adopt a policy of consensus so that difficult decisions as well as decisions that require considerable investment are undertaken on the basis of agreement with regards to the long term goals, objectives and abatement measures, that transcend 5 year legislatures, to attain success in this policy domain.

A policy of consensus will allow for the design of a far more effective communications and educational process as the message, knowledge, value system that is imparted is not beset by competing and potentially different nuances that reflect political positioning which at best are marginal to the core issues that relate to Climate Change. Moreover, a policy of consensus could see political parties assuming a leadership role in shaping the hearts and minds of the Maltese community by means of mustering their considerable resources such as their TV, radio and newspaper channels as well as their respective presence in practically every town and village in Malta.

Civil society should also seek to assume a leadership role with regards to shaping society in terms of Climate Change generally as well as specifically with regards to their respective constituents. Trade Unions, for example, which are highly present and active at the workplace, can play a significant role in propelling Climate Change issues and in rendering work places more green friendly.

Finally, the philosophy that is to be adopted in terms of mobilising support and managing expectations with regards to Climate Change is that of 'continuous communication' in terms of both the evolving design as well as the implementation of the National Strategy. In this regard, such a process of communications should:

- Use the Internet by means of blogging and networking tools such 'Facebook' to ensure that the younger generation, which is primarily technology savvy, is brought into the discussion and consultation process.
- Embrace local government as an institutional medium in order to ensure that consultation and discussion on Climate Change is promulgated at a community level.
- Include discussion on the 'science' of Climate Change in the consultation process and avoid 'Doomsday' scenarios as these tend to defocus discussion from the main issues.

To strengthen the role of civil society in the process of continuous consultation on policy design and implementation monitoring the Government will establish a Climate Change Consultative Council which will be constituted of NGOs, the private sector, government, local government, constituted bodies, political parties and related institutions so that a permanent and robust consultative platform that assures sustained active participation of civil society is achieved.

The Strategy embraces the following actions:

Action 1	Achieving the culture change necessary through the promotion of ethical behaviour and a value system on Climate Change and environmental issues is a long-term process which would benefit if multi-party political support is secured.
Action 2	The Ministry for Resources and Rural Affairs together with appropriate civil society stakeholders establish the infrastructure and implement a sustained and continuous public awareness campaign drawing on the lessons gained in the process leading to the implementation of the Euro.
Action 3	Civil society such as Trade Unions and constituted bodies representing employers for example should assume an active leadership role in promulgating and shaping behaviour, culture, norms, work practices et al in relation to Climate Change and green issues by means of leveraging their respective reach of cohorts of society and the mobilisation of their respective resources to achieve such a goal.
Action 4	An Efficient Energy One Stop Shop Portal is set up within the Climate Change Division within the Malta Resources Authority to provide the public with access to knowledge and information relating to existing technologies, new technologies, emerging technologies, their impact in terms of €/kW saved, CO2 emissions abated, etc and to electronically integrate all government Climate Change related back-office interaction.
Action 5	The Climate Change Division together with the Building Industry Consultative Council and related professional bodies should embark upon a sustained and embracing information and education campaign directed at underlining the benefits and importance of implementing the Energy Efficiency Performance in Buildings regulations.
Action 6	An educational strategy that is based on the principles of accessibility of information, good practice, targeting specific consumer sectors, and that promotes the necessary culture change in how we look at and use energy, is designed by 2010 and aggressively embarked upon in a sustained manner as early as possible in that same year.
Action 7	A National Policy on Environment Education is designed by 2010 and introduced in 2011 as an integral part of the National Curriculum.

Action 8

The Ministry for Resources and Rural Affairs will establish a Climate Change Consultative Council which will be constituted of NGOs, the private sector, government, local government, constituted bodies, political parties and related institutions so that a permanent and robust consultative platform that assures sustained active participation of civil society is achieved. The Climate Change Consultative Council will establish a virtual network to enable entities involved in Climate Change activity to synergise their work thus securing continuity over time by allowing for new work to build on past initiatives and efforts.

03. Establishing an Institutional Framework for Climate Change and Building the Appropriate Human Capital

Climate Change transcends a whole range of policy domains. For the implementation of the Climate Change strategy to succeed, the institutional framework needs to be complemented through related structures that can drive forward a whole array of policy and programme matters required to address the issues of Climate Change.

The need for joined-up policy making is of critical significance in the Climate Change policy domain. Thus, with regards to Climate Change related policy making the Government will introduce a two tier approach:

- (01) A high powered Inter-Ministerial Committee chaired by the Prime Minister and constituted of the respective Ministers for Resources and Rural Affairs; Infrastructure, Transport and Communications (MITC), Finance, Economy and Investment (MFEI) and the Parliamentary Secretariat for Public Dialogue and Information is set up with the following terms of reference:

To assess and approve strategies, policies and actions that have a significant Climate Change impact as proposed by the Climate Change Division and other line Ministries and entities.

To ensure that Climate Change and energy inter-related issues and proposed actions are matters of Public Domain and thus ensure that an 'inclusive' approach is adopted as a matter of course.

To ensure that all public entities, having a direct or indirect role in matters related to Climate Change and energy related issues provide unconditional support and co-operation to the Ministry for Resources and Rural Affairs – the Ministry responsible for Climate Change - and to the Climate Change Division.

To act as a co-ordinating body (at Inter-Ministerial level) to ensure that other programmes and initiatives to be approved by Cabinet are consistent with the principles of the national goals and priorities on Climate Change and energy related issues.

- (02) Whilst the Climate Change Division will act as the Government's executive and administrative arm to secure cohesion and congruency across government entities as well as to ensure that such entities meet their responsibilities in relation to specific Climate Change matters within their particular domains, it is recognised that the establishment of the Division alone would not suffice to secure the appropriate Climate Change policy formulation and implementation framework for government.

Climate Change issues are, to a large degree, particularly with regards to abatement measures, specific to a particular domain – which demands specialised knowledge. It is not realistic to expect that the Division will have this specialised knowledge in-house. It is, however, realistic to

expect that the government entities responsible for such policy domains should have this specialised knowledge within them.

It is thus argued that the position of a Climate Change Policy Analyst is introduced in a number of selected entities that have a significant role to play on mitigation and adaptation matters relating to Climate Change specifically within their vertical policy domain.

The Government will introduce the position of Climate Change Policy Analyst in the public entities shown in Table 01 below.

Table 01 - Introducing a Network of Climate Change Policy Analysts

Entity	Rational
Malta Transport Authority	Transport is responsible for 17% of Malta's CO ₂ .
Enemalta Corporation	Electricity generated through the Power Stations is responsible for 62% of Malta's CO ₂ .
Malta Maritime Authority	Maritime business is of strategic importance to Malta.
WasteServ Malta Ltd	Waste is responsible for 6.6% of GHG in Malta as well as that it constitutes a potential source of energy.
Water Service Corporation	Ground water and Climate Change impacts may result in increased dependence on RO water production; and hence increased electricity consumption.

The “business” of Climate Change is a new public policy domain which demands a sustained critical mass and organisational capacity so that Malta is in a position to design and implement national policy, programmes and projects as well as to actively engage in international Climate Change protocols, strategies and frameworks.

Responsibility for Climate Change currently resides in the Climate Change Unit (CCU) within the Environment Department (ED) of Malta Environment and Planning Authority (MEPA). The CCU is small – has a resource capacity of five persons - and whilst trying to cover the entire gamut of the Climate Change spectrum, due to the limited resource base has had to restrict a considerable part of its focus to meet Malta's reporting needs to the EU and the UNFCCC and to maintain the GHG emissions Inventory.

Whilst the Government considered a range of organisational structures to assume administrative leadership for Climate Change – including the setting up of an ad hoc Climate Change Agency – it has concluded that the appropriate way forward would be to set up a Climate Change Division (CCD) within the Malta Resources Authority. This is for a number of reasons.

First, MRA is governed by the Malta Resources Act (CAP 423) - which empowers the Authority with “regulatory functions regarding resources relating to water, energy and mineral resources” – and thus

the powers of the Act will provide the new Climate Change Division with statutory powers as appropriate in relation to action that the Division may take.

Second, MRA already has a number of specialist staff in sectors which are of critical importance to Climate Change. Consolidating, therefore, a newly set up Climate Change function within MRA would ensure that scarce skilled specialist staff are brought together and strengthened within one entity – an optimisation of resources that would not be possible under, say, an agency status for Climate Change.

Third, the Government has learnt through past experience that setting up of highly specialised entities results in fragmentation, duplication of costs particularly in relation to corporate services. In fact, over the past years, Government has started to revert this process by consolidating entities as and where appropriate.

The CCD within the MRA will be responsible for the following functions:

Own and co-ordinate Climate Change adaptation and mitigation policy at both a national and international level.

Monitor policy and project implementation by and within MRRA as well as other Ministries to ensure that Malta's EU obligations relating to Climate Change (EU Emissions Trading Scheme; Effort Sharing Scheme; Renewable Energy Performance in Energy Buildings; etc) as well as those relating to UNFCCC are achieved.

Ensure that the economics of Climate Change are accounted for with regards to horizontal and vertical measures relating to Climate Change; and Climate Change abatement measures result in highest level of tCO₂e reductions for every €1 of investment.

Provide sustained and aggressive nation wide knowledge, education, information and communications in order to achieve behavioural and attitudinal change with regards to Climate Change.

Mobilise and secure indigenous R&D&I related to Climate Change within the framework of a Climate Change and Environmental Technologies and Resources R&D&I strategy; and in doing so achieving synergy between government entities; knowledge and higher education institutions; the private sector; and external financing bodies such as ERDF, Intelligent Energy Europe, LIFE+, et al.

Maintain the inventory and knowledge base on Climate Change adaptation and mitigation matters including data GHG emissions.

The CCD will have four functional areas as shown in Table 02 below:

Table 02– Functional Responsibilities of the Climate Change Division

Climate Change Division			
Strategy, Policy and Economics Unit	Programme Management Unit	Education and Communications Unit	Technology and Research Unit
<ul style="list-style-type: none"> •Policy design •Policy Co-ordination •Interaction with Permanent Representation •Pre-Environment Council (Climate Change) preparation •Adaptation Strategy •Mitigation Strategy •UNFCCC representation •Post-Kyoto preparation •Inventory Management •Economic modelling relating to Malta's EU and Kyoto climate Change obligations •EU ETS •Effort sharing •Renewable Energy •Vertical Sectors (Maritime; Aviations; Transport; et al) •Carrying out economic modelling •Preparing economic briefs to support the Ministry and Permanent Representations on Climate Change related briefs 	<ul style="list-style-type: none"> •Introduce and maintain a performance management system of all Climate Change initiatives carried out by Government •Maintain on-going review of initiatives against set timeframes and targets . obligations committed by Malta •Hold check points meetings wiht Ministries and entities where initiatives are designated to be in trouble •Issue monthly performance reports to identified stakeholders showing stte of play, issues and action required •Follow up on actions identified with regards to initiatives designated to be in trouble •Monitor Climate Change targets introduced for Ministries et al and report accordingly 	<ul style="list-style-type: none"> •Design and manage a national educational campaign on an on-going basis •Design and manage a national communications campaign on an on-going basis •Proliferate further application and take-up of greener technolgoies •Setting up and managing and Efficient Energy One Stop shop Portal •Liaising with education authorities, local government, social society, and other stake holders as appropriate 	<ul style="list-style-type: none"> •Designs the National Climate Change and Energy Resources R&I strategy •Management the implementation of the said strategy •Secures synergy between University of Malta, EuroMedITI Ltd, MCST, Malta Enterprise, MCAST and other players both in R&D&I generally on related matters and specifically in relation to the National Climate Change and Energy Resources strategy •Target external financing instruments such as LIFE +, Intelligent Energy Europe, FP7, ERDF, et al
Division to establish a Shadow Price of Carbon as appropriate			

The CCD is expected to reach a complement of 16 full time staff - with 6 staff members to be recruited in 2010 together with the transfer of 5 staff members of the Climate Change Unit within Malta Environment and Planning Authority (11 persons); 3 staff members to be recruited in 2011; and a further 2 staff members in 2012.

Diagram 04 below depicts graphically the institutional framework that Government will adopt for Climate Change.

It is pertinent to underline, that in December 2008 the Government announced that Malta is to change its Annex II status vis-à-vis the Kyoto Protocol and that it initiated the process to submit an application to obtain an Annex I status. Of particular note is that once Malta becomes an Annex I party it will mean that Malta would be in a position to actively enter into Climate Change initiatives with non-EU countries under the Joint Implementation mechanism.

This would mean that Malta would be able to benefit directly in that the CO₂ or other GHG emissions reduced would be positively netted against Malta's GHG emission levels. Thus, for example, Malta may counter the physical limitations that restrict it from setting up large scale on shore wind or solar thermal commercial farms on local territory by entering into Joint Implementation initiatives with, say, North African countries, which would lead to the construction of Renewable Energy Sources (RES) production farms on the territory of a neighbouring country. This would allow Malta to reap credits in relation to GHG reduced emissions arising from such a Joint Implementation initiative.

The Office of Fair Competition will periodically survey prices of energy efficiency technologies to ensure that there will be no artificial obstacles that will inhibit the penetration of such technologies.

Moreover Government will continue to provide Green Leadership. In this regard, each head of Government entity will be requested to draw up a Carbon Footprint Reduction Plan that will target, amongst others, reduction in general CO₂ emissions, reduction in government road vehicles emissions, reduction by means of increased energy efficiency, reduction by means of application of RES technologies and reduction in water consumption. In order to ensure transparency as well as to demonstrate leadership in such regard Government will annually publish the performance of each government entity against the Carbon Footprint reduction plan targets.

The Strategy embraces the following action:

Action 9	The Strategy for Policy and Abatement measures relating to the reduction of GHG emissions will be on a rolling annual basis and will be reviewed on a three year basis with the first review to take place by the end of 2011.
Action 10	An Inter-Ministerial Committee on Climate Change and Energy under the stewardship of the Prime Minister will be constituted to ensure joined-up policy design and implementation.
Action 11	Climate Change Policy Analysts will be appointed in the Malta Transport Authority, Enemalta Corporation, WasteServ Malta Ltd, Water Services Corporation and the Malta Maritime Authority to ensure that policy initiatives within these entities are designed in accordance to national direction on Climate Change.
Action 12	A Climate Change Division with the mandate to "secure, both nationally and internationally, policy design and implementation that will result in adaptation to, and mitigation against, Climate Change" is to be set up within the Malta Resources Authority.

Action 13	The Climate Change Unit of the Malta Environment and Planning Authority will be consolidated within the Climate Change Division that is to be established within the Malta Resources Authority.
Action 14	The Climate Change Division will assume the status of the Designated National Authority for the United Nations Framework Convention on Climate Change which currently rests with the Malta Environment and Planning Authority.
Action 15	The Climate Change Division will have a resources capacity of 16 Full Time Equivalent staff and will focus on four areas: (a) strategy, policy and economics; (b) programme management; (c) education and communications; and (d) technology and research.
Action 16	The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead to design an R&D&I Strategy for Malta on Climate Change and Environment Technologies and Resources by 2010.
Action 17	The Climate Change Division will assume responsibility for the National Inventory for GHG emissions and will establish the strengthening of the said Inventory as a strategic objective.
Action 18	The Climate Change Division will seek to establish a vibrant Joint Implementation mechanism and in doing so will work with the private sector in order to optimise opportunities available to Malta to reap carbon credits through renewable technology initiatives carried out in third countries under the Joint Implementation mechanism.
Action 19	The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead in preparing submissions for financing under schemes such as ERDF, ESF, IEE, etc for R&D&I of indigenous solutions related to Climate Change and Environment Technologies and Resources.
Action 20	The Climate Change Division will work with knowledge institutions such as the University of Malta to see how appropriate under-graduate programmes can be strengthened by introducing modules or electives on Climate Change disciplines.
Action 21	The Climate Change Division will work with the Ministry of Education to obtain priority ranking in request for sponsorship through the Malta Government Scholarship Fund for postgraduate studies on Climate Change disciplines.
Action 22	The Climate Change Division will work with the Malta College for Arts, Science and Technology so that human capital in technical fields relating to renewable and other related technologies is built.

Action 23	The Climate Change Division will work with the appropriate government entities to introduce short term and long term internships directed towards undergraduates and graduates specialising in different disciplines relating to Climate Change in order to foster the development of such human capital.
Action 24	The Office of Fair Competition will periodically survey prices of technologies relating to energy efficiency in order to ensure that there will be no artificial obstacles that will inhibit the penetration of such technologies.
Action 25	The Government will, with effect from 2011, request each Head of Government entities to draw up and implement an annual Carbon Footprint Reduction Plan that will target, amongst others, reduction in general CO ₂ emissions, reduction in government road vehicles emissions, reduction by means of increased energy efficiency, reduction by means of application of RES technologies and reduction in water consumption.
Action 26	The Climate Change Division will monitor Carbon Footprint Reduction Plans drawn up by government entities and will annually publish the performance of each government entity against the Carbon Footprint reduction plan targets.
Action 27	The R&D&I capacity of public entities such as Enemalta Corporation and Water Services Corporation is to be strengthened to allow them to undertake applied R&D&I on processes, techniques and plant to induce efficiency measures in respect of energy and water generation / production and distribution.

04. Integrating the Economics of Climate Change in Policy Design and in the Identification of Abatement Measures

The report of the Climate Change Committee discussed at considerable length the economics of Climate Change and the importance of ensuring that policy decisions and the identification of abatement measures must be based on the basis of ensuring the highest return of tCO₂e emissions reduction for every €1 of investment made.

Moreover, future decisions are also to weigh whether the optimal decision with regards to a particular abatement policy option would be to:

- either to invest in emission reduction infrastructure in Malta in order to ensure that the level of CO₂ reductions are such that place Malta's CO₂ and other GHG emissions foot print below the national levels set by the EU-Emissions Trading Scheme (ETS); or
- whether it makes more economic sense to forego a high financial cost in investing in emissions reduction infrastructure and replace it by means of purchasing carbon credits or green certificates from the open market.

The investment in energy supply side infrastructure required to ensure that Malta reduces its CO₂ footprint by 2020 to the levels established by the EU Commission is shown in Table 03 below.

Table 03 - Investment in Energy Supply Side Infrastructure

2009	Delimara Power Station Upgrade	€20m
2011	Delimara New Plant	€180m
2012	Underwater Cable to European Electricity Grid	€200m
2012	Delimara Power Station Upgrade	€20m
2013	Delimara New Plant	€180m
2015	Decommissioning of Marsa Power Plant	Not Known
2018	Delimara New Plant	€200m
2018	Delimara New Plant Upgrade	€20m
		€800m
2016	Infrastructure to handle / transport Natural Gas	€350m
2016	Conversion of Plants to Natural Gas	€40m
		€390m
		€1,190m

In terms of alternative renewable technologies preliminary studies carried out by MRRA show that a 10MW on shore wind farm would require a capital cost of approximately €18.5m to €25.5m and that a on shore wind farm would require a capital cost of €228m - €335m to be incurred by the investor .

Moreover through the ERDF scheme, Malta Enterprise has introduced an energy grant scheme of €10 m to assist industry and enterprise to adopt RES solutions.

In terms of the demand side, Enemalta Corporation and Water Services Corporation have jointly embarked upon a project to introduce Smart Meters in all domestic, industry and commercial premises. The envisaged cost of this initiative is €70m.

It is pertinent to underline that, with the exception of the conversion to natural gas to fuel the power plants, the investment is primarily directed to modernise the plants, increase capacity, secure continuity of supply, reduce non-technical losses, secure a more efficient and flexible billing framework. The resultant positive by-product impacts of this investment on CO₂ emissions stem from:

Increasing plant efficiency from approximately 26% to 49% with specific reference to the Marsa plant.

The new plant that will replace the Marsa plant will utilise state of the art CO₂ abatement technology.

The Smart Meters will result in a reduction of non-technical losses and hence a need to generate less power.

Whilst the Climate Change Committee in its reports were not in a position to present conclusive financial costs for the recommendations proposed, the supply side investment alone was estimated at €820m in a 'without Natural Gas' scenario and €1.2billion in a 'National Gas' scenario. There is no doubt that these figures unequivocally demonstrate that the financial and economic costs involved in achieving a low carbon energy efficiency economy and society are, indeed, staggering.

Moreover, the financial and economic consequences of a failure by Malta to meet its CO₂ emission obligations will result in considerable negative implications as Malta would require to purchase carbon credits at market prices to pay for CO₂ emissions emitted over and above the carbon footprint set for it under the ETS in relation to the energy sector; with the transport and waste and agricultural sectors respectively being governed by the Effort Sharing mechanism which demands that GHG emissions levels can by 2020 only increase by 5% on 2005 levels.

The Government recognises that its Strategy for policy and abatement measures to reduce GHG emissions must be grafted onto the economic considerations and dimensions of Climate Change – and in doing so ensure that policy design and the identification of abatement measures will be such that will render the highest level of tCO₂e reduction for each €1 investment made.

In this regard, the Ministry of Finance, the Economy and Investment will strengthen the appropriate budgeting and economic planning capacity within it in order to ensure the rooting of the economies of climate change at the central economic planning level.

The Strategy embraces the following actions:

Action 28	The electricity sector, with particular reference to the Emissions Trading Scheme, should constitute the primary focus of concentrated efforts to reduce CO ₂ emissions and in doing so efforts will be directed towards policy and abatement measures that will render the highest level of tCO ₂ e reduction for each €1 of investment made.
Action 29	Government recognises that, in embarking on abatement measures, it may be the case that the purchase of carbon credits from international markets may be far more cost effective than embarking on a local high cost and high maintenance investment in Malta and therefore such decisions are to be based on the net value benefit to Malta.
Action 30	The Climate Change Division working with the Economic Planning Division and other appropriate government entities is to design a strategy that sets out when and how government entities are to invest in carbon credits in order to ensure that such credits are purchased under conditions that are favourable to Malta.
Action 31	The Climate Change Division will work with the Economic Planning Policy Division to introduce a National Shadow Price for Carbon together with mechanisms for its ongoing review by July 2010.
Action 32	The Ministry of Finance, the Economy and Investment will study the possibility of grafting the economics of Climate Change onto both the national budgetary and macro and micro economic planning framework with the possibility of introducing such a planning mechanism by 1 st January 2013 – the coming into effect of Phase III of the Emissions Trading Scheme. In doing so, the Ministry will seek to strengthen the central economic and budget planning functions as appropriate.
Action 33	The Climate Change Division is to lead a Working Group constituted of the National Statistics Office and other appropriate stakeholders that will introduce, in a phased manner, a national statistical framework on Climate Change by end 2012.

05. Energy Abatement Measures

The strategy that Government will adopt with regards to Energy Abatement Measures is multi pronged as shown in Diagram 05 below.

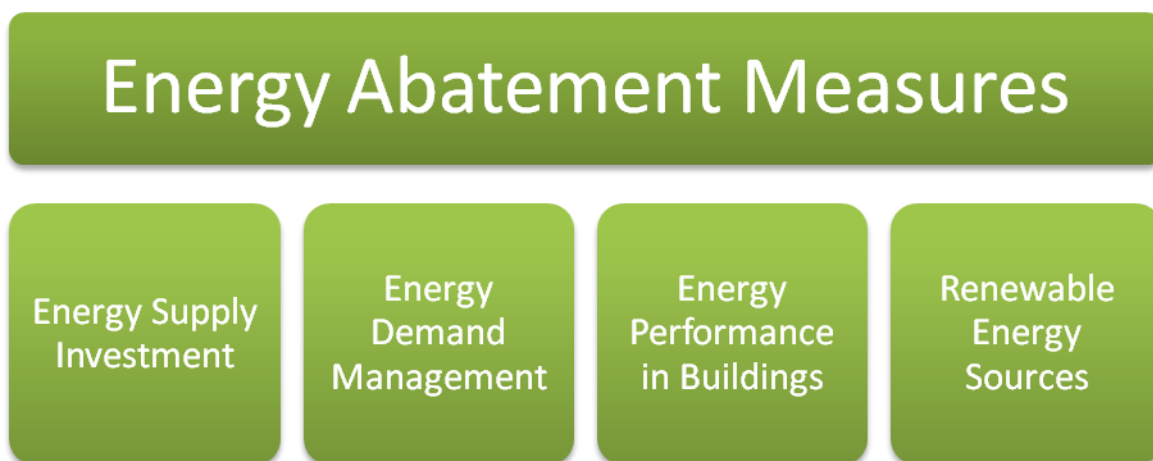


Diagram 05: Energy Abatement Measures

05.1 Energy Supply Side Investment

With regards to energy supply side investment Government will adopt the following approach:

Energy Generation

Late in Spring and throughout Summer considerable discussion was raised on whether the recommendation of the Climate Change Committee in its original report and the subsequent signing of the contract for the purchase of a new 150 MW Generation plant was a correct decision.

The Government maintains its position that the purchase of the 150 MW generation plant was a correct decision given that the Marsa Power Station with an efficiency rating of 26% is the main GHG emitting source in relation to high CO₂ emissions stemming from an obsolete energy generation plant.

Thus it is both economically sound as well as Climate Change friendly that the obsolete energy generation plant at the Marsa Power Station is replaced in part (until complete decommissioning is achieved) with more efficiency generation technology, even if such technology is powered by conventional fuel sources; in so far that such technology is equipped with the Best Available Technology for CO₂ and GHG abatement.

A strategy to initiate a phased closure of the Marsa Power Station would result in a far more accelerated pace in the elimination and reduction of CO₂ and other GHG emissions from Malta's atmosphere.

The above is independent of the fact that the shelf-life of the Marsa Power Station is, under the Large Combustion Directive, established at 20,000 operational hours for the period 1st January 2008 to 31st December 2015 – where-in in the event that the plant is operated on a 24hours*7 days basis these hours will be exhausted by April 2012.

Thus, unless Enemalta Corporation manages these operational hours as optimally as possible and continues with the process to replace the energy generation infrastructure at Marsa Power Station, Malta may, in April 2012, be in a position where it will be subject to sanctions under the Large Combustion Directive.

In this regard, the Government has decided that the period between 2009 and 2016 (when it envisages that the appropriate infrastructure to handle natural gas could at the earliest be in place should such an abatement measure be selected) is best managed by a policy where-in investment in modern energy plant generation and appropriate GHG abatement technologies is embarked upon at the earliest possible **subject to the essential condition** that such generation technology can be converted to operate on natural gas when it becomes possible to make the transition to power the generation plants by natural gas.

This conditioning technology requirement therefore allows Malta to invest **today** in order to reduce the GHG emissions stemming from the Marsa Power Station at the earliest possible whilst allowing the **flexibility** for Malta to **embrace** natural gas as an alternative power source when this become realistically possible.

Substitution of Fuel Oil by Natural Gas

Unlike various aggressive attempts to show otherwise, Government reinforces that the decision to purchase the new 150MW Generation Plant was based on the strategic decision that such a Generation Plant would be convertible to operate on natural gas in the event that the Government at a future point in time decides to opt for gas, a universally recognised cleaner way to generate electricity.

Nevertheless the decision to opt for natural gas technology to operate the new plants should not be taken solely on the basis of ‘emotive’ reactions but also on the basis of whether a decision to invest in the appropriate infrastructure in order to ensure a continuous supply of natural gas will constitute an abatement measure that provides the most appropriate return in tCO₂e reductions for every €1 invested.

As shown previously, investment to establish the appropriate infrastructure for the continuous generation of electricity on the basis of gas requires a robust logistical and infrastructure environment for the supply, storage and application of natural gas which is estimated at an additional €390m over and above the other energy supply side investment.

It is also pertinent to re-iterate that the options available for the supply of natural gas on a continuous basis are limited – which include:

- Gas pipe line.
- Compressed Natural Gas – This requires a shuttle service approximately every 18 hours.
- Liquid Natural Gas – This requires a shuttle service approximately every 3 weeks.

Moreover, vessel logistics management of such a sensitive “raw material” would demand sufficient storage capacity to absorb delays that will arise due to bad weather, strikes in foreign ports, et al.

Thus, the decision to opt for natural gas technology to operate the electricity generation

plants should be on the basis of whether a decision to invest in the appropriate infrastructure in order to ensure a continuous supply of natural gas will constitute an abatement measure that provides the most appropriate return in tCO₂e reductions for every €1 invested.

Submarine Inter connector

The Government re-iterates the strategic value of the importance of a submarine inter-connector between mainland Europe (through Sicily and Malta) for the transmission of electricity. The introduction of such a submarine inter-connector will result in the following strategic benefits to Malta:

- The removal of Malta's current isolation, where a natural disaster may result in a situation where Malta would not be able to meet, in part or in full, its energy requirements.
- The ability of Malta to purchase 'green' electricity from mainland Europe by means of 'green certificates' thereby providing an alternative source in terms of the solutions Malta needs to embrace in order to meet the target to meet 10% of its electricity demands 2020 by means of alternative energy sources.
- The ability for Malta to purchase electricity generated by low carbon or carbon neutral plants benefiting from large economies of scale. This will result in overall reductions in the emissions of CO₂ and is possibly one of the main advantages of such an interconnector.
- The ability of Malta to export excess electricity generated during periods of low demand or to export excess energy generated through intermittent renewable energy technologies during base load generation – such as, for example, wind generated power.
- The ability to purchase lower priced electricity – attainable in Europe as a result of economies of scale – and in doing so reduce the Total Cost of Ownership of electricity generated for local consumers.

It is to be noted that the technical feasibility study carried out by Enemalta Corporation has concluded that both the HVAC and the HVDC solutions are technically and economically viable, although the HVAC solution has significant advantages. It is pertinent to underline that half of the cost of the feasibility study has been financed through the TEN-E Programme.

It is planned that the cable landing sites will be situated at Pembroke in Malta and Marina di Ragusa in Sicily. On the Maltese side it will be connected to the present 132kV transmission system whilst on the Sicilian side it will be connected to the 220kV transmission network, 18km inshore at the Ragusa substation linked to a dual 220kV ring circuit.

The interconnector is designed and capable of being operated bi-directionally, although one-way flows (import to Malta) are expected to dominate, due to economic reasons; indeed the interconnector will directly substitute local existing generation capacity.

The Government has taken the decision to proceed with the project, which will consist of one 225MW / 250 MVA interconnector. Enemalta Corporation will seek partial financing for the project under the EEPR programme. The plan is to have the electricity interconnector in operation before the end of 2012.

At the end of July 2009, Enemalta Corporation issued an Expression of Interest in order to short list suitably qualified bidders for the interconnector project who would consequently be invited to submit bids under the restricted tendering procedure.

**Generation
in the
Private
Sector**

The Climate Change Division will study the possibility to introduce incentives to large industrial concerns to build their own energy generation plants, or where such plants already exist to improve the technology.

Furthermore, industrial concerns are to be encouraged to review their energy auxiliaries and replace inefficient equipment by new advanced technology to, on the one part, reduce their energy consumption, and on the other part to reduce the GHG emitted by such concerns.

05.2 Energy Demand Management

With regards to energy Energy Demand Management Government will adopt the following approach:

**Smart
Meters**

Enemalta Corporation and Water Services Corporation have jointly through a special operating vehicle (Automated Revenue Management Systems Ltd) embarked on a strategic initiative to introduce Smart electricity and water meters in each household, industrial and commercial concerns.

It is the intention of the Ministry for Infrastructure, Transport and Communication to implement the installation of the Smart Meters networks at the earliest possible – the intention being that the process is completed by June 2011.

**Transparent
Pricing**

Government re-iterates that the price of electricity generated and distributed by Enemalta Corporation should reflect the true cost – excluding inefficiencies that are within the power of management to address.

It is pertinent to note that certain inefficiencies are inherent to the generation and distribution of energy and will continue to prevail even if the Best Available Technology is introduced.

The establishment of the true price and the charging of the said price is of fundamental importance in order to introduce the necessary leverage to, on the one hand induce the consumer to change his or her behaviour in terms of consumption, and on the other hand, to incentivise the consumer to invest in alternative technologies as a substitute to electricity generated by Enemalta Corporation.

It is to be noted that the increases in tariffs introduced by the Government late last year had a visible impact on energy consumption as can be seen from Table 04 below.

Table 04 - Consumption Demand January 2009 – July 2009

Month	Year	MW/h Sent out	MW Peak
January	2007	169,607	337
February	2007	153,394	341
March	2007	166,754	336
April	2007	154,718	307
May	2007	166,971	320
June	2007	189,030	418
July	2007	219,204	434
January	2008	181,620	359
February	2008	174,352	370
March	2008	169,049	335
April	2008	163,065	316
May	2008	169,980	317
June	2008	187,835	386
July	2008	229,642	412
January	2009	165,511	332
February	2009	154,797	350
March	2009	159,517	326
April	2009	147,895	283
May	2009	159,077	321
June	2009	172,954	347
July	2009	209,817	389

As can be seen from Table 04 above, consumption in 2009 fell considerably following the increase in the tariff rates. With exception of the month of May, consumption fell below 2008 levels, and with the exception of February and May consumption fell below 2007 levels.

Of particular note is the considerable reduction in consumption in the months of June and July in 2009 when compared to similar months in 2007 and 2008 respectively – where-in one can reasonably conclude that in 2009 the use of Air-Conditioning was far more judiciously managed than in the previous two years.

Energy Social
Support
Policies

The Climate Change Division will study the possibility of replacing the current energy benefit support policy, in part or in whole, by a policy that will provide households benefiting from the existing scheme with energy efficient white goods.

Such a policy, should it be introduced, would be neutral in terms of the financial support received by households under the existing energy benefits support scheme. Support, rather than provided by direct financial means, would arise from savings in electricity bills due to the use of far more energy efficient appliances. Nationally, should such a policy be possible to introduce, it would result in reduced CO₂ emissions due to reduced demand of electricity as a direct result of increased use of energy efficient white goods.

Energy
Business
Advisory
Scheme

Government will continue to support the Business Advisory Scheme introduced in the 2009 National Budget. The Business Advisory Scheme is directed to support industry and enterprise to undertake energy audits.

Shifting
Demand to
Non Peak
Times

The Ministry for Infrastructure, Transport and Communications will, once the Smart Meters are installed nationally, introduce differentiated tariffs to encourage the shifting of consumption demand from peak times to non peak times during base load.

Energy
Efficient
Lighting

The Ministry for Resources and Rural Affairs will implement the EU Directive on the Ban of Incandescent Lights. As from 1st September 2009 the 100w incandescent bulb has been banned. The phasing out of incandescent lights will conclude on 1st September 2012 with the ban of the 25w bulb.

Smart Street
Lighting Grid

The Malta Transport Authority and the Climate Change Division will study the introduction of a Smart Street Lighting Grid for arterial roads as well as continue to introduce passive lightening technologies and alternative energy power for road infrastructure such as traffic lights.

ICT to
facilitate Low
Carbon
Economy

In March 2009 the EU Commission issued a Communication titled 'On Mobilising Information and Communication Technologies to Facilitate the Transition to an Energy Efficient, Low Carbon Economy'. The Communication identifies that ICT represents 7.8% of electricity consumption in the EU and is expected to grow to 10.5% by 2010.

The Communication adds that ICT can be a powerful tool to reduce CO₂ emissions. A particular example it mentions is the use of smart metering which "exploits the capacity of ICTs to quantify energy consumption and provide appropriate information

to consumers (where) if consumers can understand where inefficiencies come from, they can act to mitigate or eradicate them completely.” The Communication adds trials with Smart Meters in the EU show that providing information to consumers on their actual energy consumption can lead to reductions of up to 10% in energy consumption.

The Strategy that is adopted by Government is consistent with the strategic thrusts that the EU has identified in terms of mobilising ICT to facilitate the transition to an energy-efficient, low carbon economy. The Strategy proposes technology directed solutions to reduce CO₂ emissions in a number of key strategic areas – energy demand management through the Smart Meter technology; improved management of street lighting through the potential establishment of a Smart Street Lighting Grid; and improved transport management through the introduction of an Intelligent Transport System.

Moreover, the Climate Change Division and the Ministry for Infrastructure, Transport and Communication will closely follow the work by the EU Commission on ICT and an Energy Efficient and Low Carbon Economy and will implement measures that will have a positive impact on the reduction of CO₂ emissions as they arise.

Eco-Design Standards

The Malta Standards Authority (MSA) will continue to transpose into local legislation the Framework Directive for the Eco Design of Energy Using Products. The MSA working with the Climate Change Division, will support the activity by disseminate knowledge and information on this initiative to the extent possible.

Eco-Management and Audit Scheme

It is believed that the best way forward in terms of seeking certification in relation to environment management is the promulgation of the Eco-Management and Audit Scheme (EMAS), including that of providing appropriate assistance to entities seeking to obtain EMAS accreditation.

The objective of EMA is to promote continual improvements in environmental performance of organisations by the:

- establishment and implementation of environmental management systems.
- systematic objective and periodic evaluation of the performance of such systems.
- provision of information on environmental performance.
- creation of an open dialogue with the public and other interested parties as well as the active involvement of employees in the organisation and appropriate training.

The EMAS scheme, which is a voluntary scheme, integrates within it the international standards for Environmental Management Systems: EN/ISO 14001.

It is pertinent to underline that the MSA is the appointed competent body whereas the National Accreditation Body of MSA is responsible for the accreditation of EMAS

Verifiers.

The MSA and the CCD will work together to promulgate the EMAS and to consider means of how to assist local entities to obtain the EMAS accreditation.

Energy
Efficiency
Information

The Ministry for Resources and Rural Affairs will extend further as appropriate the measure taken in the 2009 budget directed at introducing energy efficiency information on all domestic appliances.

05.3 Energy Performance of Buildings

The Energy Performance of Buildings Directive is the centre piece of Malta's policy direction to improve energy efficiency in buildings. The Directive has five prongs – (a) certification of buildings' energy performance; (b) regular inspection of boilers and air conditioning; (c) training of experts and inspectors; (d) calculation procedures; and (e) minimum Energy Performance in Buildings requirements. It is pertinent to underline that in May 2009 training was carried out for persons who will carry out certifications and inspections.

The Directive, which was implemented in December 2002 and transposed into national legislation in Malta by LN 238/2006 published on 1st November 2006, has, however, encountered difficulties in being implemented. It is pertinent to underline, however, that such difficulties are not unique to Malta but prevail across Member States. The difficulties include: the challenges of technical implementation; a lack of proper national administration and a shortage of qualified experts; the fact that it has taken more time than anticipated to revise national building regulations; difficulties relating to the setting up of the certification schemes and train experts. Experience seems to indicate that there has been little monitoring of the impact of the Directive on actual energy savings.

In November 2008, the Commission, in fact, issued a proposal for a 'recast' of the Energy Performance of Buildings Directive following a broad range of contributions from Member States and interested parties.

Thus with regards to Energy Performance of Buildings the following approach will be adopted:

- The need to review the implementation of the Energy Efficiency Performance in Buildings framework to identify lessons and to make the appropriate changes within the parameters of the final decision reached by the Commission on the Recast proposal.
- The need to participate actively in the discussions underway within the EU Commission on the Recast proposal with a view to influence the outcome of such discussions to the extent possible.
- The need to embark on an information and education campaign directed at underling the benefits and importance of implementing the energy performance in building frame work.
- The need to work with knowledge institutions to build technical and professional human capital on energy efficiency building design and construction.

- The need to consider the potential design of buildings that will allow for the ‘plug and play’ of RES technology at no additional cost to retro-fit buildings for the effective operation of appropriate RES technology.
- The need to consider to what extent zero energy buildings are to be embraced in Malta.

05.4 Stimulating the Penetration and Use of Renewable Energy Sources

The Government re-affirms its recommendation that Malta’s approach to RES is to be a mix of the most applicable technologies that are most suited for Malta – and in doing so it will seek within such a mix a balance of all types of technologies available today and in the future.

In establishing the most appropriate way forward for Malta it is imperative that in the determination of the cost effectiveness of RES and related technologies, and hence the level and degree of incentives to be introduced, the assessment of such RES abatement measures should include the afore-mentioned Shadow Price of Carbon.

With regards to the use of RES and related technologies the following approach will be adopted:

- The need to direct emphasis on the up take of all forms of solar energy technologies.
- The continued need to finance in part the capital costs of RES solar technology for domestic users and to consider a market incentive mechanism for industrial and enterprise users that is significantly more attractive to that in place today.
- The consideration of the use of surface areas of public buildings for use for the accelerated deployment of Photo Voltaic technology.
- The assessment of a policy to rehabilitate appropriate land sites for the deployment of RES technologies for use by industrial concerns, with such sites being made available with appropriate connectivity to the grid.
- The extension of the right of servitude to include the installation of solar water heaters and to provide households with no access to surface area to install Photo Voltaic technology with access to the surface area of public buildings.
- The continued evaluation of on-shore and off-shore wind technology as an important RES technology in so far that such an abatement measure is technically possible.
- The assessment of the application and use of low grade Geothermal technology as a RES technology.
- The continued facilitation of the expansion of the Bio-fuel market subject that this is carried out within the constraints of the EU sustainability criteria for Bio-fuel and with such focus directed towards secondary Bio-fuel sources such as recycled domestic and industrial oil waste.
- The design of regulation for the introduction of autogas as an accessible and affordable substitute for fuel for vehicle drivers.

05.5 Securing Effective Management of Water and Water Production

A significant proportion of electricity generated is consumed for potable water production by the Water Services Corporation. A major continuous programme of works embarked upon by the Corporation since 1994 has seen the electricity consumption of RO plants fall from 11% of the total electricity generated in 1994 to 4% in 2007.

Nevertheless, the utilisation of 4% of energy generated for the production of water still amounts to a significant proportion which continues to require effective management as well as innovative technology to reduce to the least possible amount.

With regards to the use of RES and related technologies the following approach will be adopted:

- The repeal of the current practice not to invoke legal provisions that mandate that buildings must have rainwater capture reservoirs.
- Domestic users are to be propelled to integrate water captured in wells with the plumbing system for secondary use.
- The continued review of the technology of its Reverse Osmosis plants to reduce further the energy utilised for the production of potable water.
- The continued review of the water transfer and distribution network to reduce the demand per cubic meter of water produced and distributed.

The Strategy embraces the following actions:

Action 34	Government re-affirms its decision to invest, during the period 2009 and 2015, in modern electricity generation plant and appropriate GHG abatement technologies subject to the essential condition that such generation technology can be converted to operate on natural gas; should a decision be reached to power the generation plants by natural gas.
Action 35	Government will reach a decision on whether to invest in the appropriate infrastructure to power the generation plants by means of natural gas only once it is conclusively shown that the implementation of this adaptation measure will provide the most appropriate return in tCO ₂ e reductions for every €1 invested – with a target implementation date set at 2015.
Action 36	Enemalta Corporation, will, following the successful closure of discussions with appropriate regulatory authorities in the EU, proceed with the implementation of one 225MW / 250 MVA submarine interconnector to be in operation by 2012.
Action 37	The Climate Change Division will study the possibility of introducing incentives to large industrial concerns to assist them in building their own energy generation plants or, where such plants already exist, to improve the technology on the basis that (a) such distributed generation plants are designed to Best Available Technology; and (b) that such distributed generation plants are capable of conversion to natural gas.

Action 38	Industrial concerns should review their energy auxiliaries and replace inefficient equipment by new advanced technology to, on the one part, reduce their energy consumption, and on the other part, to act as a GHG abatement measure.
Action 39	The Automated Revenue Management Systems Ltd, will seek to nationally implement the Smart electricity and water meter grid by June 2011.
Action 40	Government reconfirms its policy decision that the price of electricity generated and distributed by Enemalta Corporation should reflect the true cost – excluding inefficiencies that are within the power of management to address – so that behavioural change in terms of consumption patterns and of investment in alternative technologies respectively is induced.
Action 41	The Climate Change Division will study the possibility of replacing the current energy benefit support policy, in part or in whole, by a policy that will provide households benefiting from the existing scheme with energy efficient white goods. If introduced, such a policy will be directed to be equivalent in terms of support to that which is currently received by households as compensation benefit, in part or in whole, would stem from reduced energy bills due to the use of more efficient energy appliances.
Action 42	Government will continue to support the Business Advisory Scheme introduced in the 2009 National Budget to support industry and enterprise to undertake energy audits.
Action 43	The Ministry for Infrastructure, Transport and Communications will introduce differentiated tariffs to encourage the shifting of consumption demand from peak times to non-peak times during base load once the Smart electricity and water meter grid is introduced nationally.
Action 44	The Ministry for Resources and Rural Affairs will implement the EU Directive on the Ban of Incandescent Lights – with the 100w incandescent bulb being banned as from 1st September 2009 with the phasing out of incandescent lights to be concluded on 1st September 2012 with the ban of the 25w bulb.
Action 45	The Climate Change Division together with the Malta Transport Authority, Roads Infrastructure Directorate, the Association of Local Councils and Enemalta Corporation will study the introduction of a Smart Street Lighting Grid for arterial roads.
Action 46	The Roads Infrastructure Directorate will continue to introduce passive lightening technologies and alternative energy power for road infrastructure such as traffic lights where so appropriate.

Action 47	The Climate Change Division and the Ministry for Infrastructure, Transport and Communication will closely follow the work by the EU Commission on ICT and an Energy Efficient and Low Carbon Economy and will implement measures that will have a positive impact on the reduction of CO ₂ emissions as they arise.
Action 48	<p>The Malta Standards Authority will:</p> <ul style="list-style-type: none"> (a) continue to transpose into local legislation the Framework Directive for the Eco Design of Energy Using Products and will support this activity by disseminating knowledge and information on this initiative to the extent possible; (b) together with the Climate Change Division promulgate the Eco-Management and Audit Scheme nationally as well as design appropriate measures to assist entities to obtain the EMAS accreditation.
Action 49	The Climate Change Division will study the introduction of an eco-contribution on non low energy classified appliances in order to facilitate the national uptake of A+ to A+++ energy class appliance.
Action 50	The Government will extend further as appropriate the measure taken in the 2009 budget directed at introducing energy efficiency information on all domestic appliances.
Action 51	The Malta Resources Authority will review the implementation of the Energy Efficiency Performance in Buildings framework to identify lessons learnt and to make the appropriate changes within the parameters of the final decision reached by the Commission on the Recast proposal.
Action 52	The Malta Resources Authority will participate actively in the discussions underway within the EU Commission on the Recast proposal on the Energy Efficiency Performance in Buildings Directive with a view to influence the outcome of such discussions to the extent possible.
Action 53	The Climate Change Division will hold discussions with the University of Malta to (a) determine how undergraduate course content can be strengthened in terms of energy efficiency building design; and (b) introduce post-graduate programmes specialising in the discipline within the Mediterranean generally, and Malta specifically.
Action 54	The Climate Change Division together with appropriate entities will assess how best to implement a policy that would see all new development as well as re-construction works on buildings are constructed with the appropriate plumbing installation works that will allow for the seamless plugging-in of solar related alternative technology equipment.

Action 55	Government will constitute a team of experts to draw up by 2011 a National Policy for Zero Energy Buildings.
Action 56	Government will seek to achieve, as a minimum, a 4% reduction in energy generated by fuel oil by means of alternative renewable forms of solar technologies.
Action 57	Government will incentivise, as appropriate, the use of all forms of solar energy technologies - directing, however, market incentives to those forms of solar energy technologies that will result in the highest tCO ₂ e reduction for each €1 invested in such RES solar technology.
Action 58	Government will continue with the current strategy of financing in part the capital costs of RES solar technology for domestic users and will introduce as appropriate a market incentive mechanism for industrial and enterprise users that is significantly more attractive to that in place today.
Action 59	Government will consider the use of surface areas of public buildings for use for the accelerated deployment of Photo Voltaic technology.
Action 60	Government will consider the rehabilitation of appropriate land sites for the deployment of RES technologies for use by industrial concerns, with such sites being made available with appropriate connectivity to the grid.
Action 61	Government will consider extending the right of servitude to include the installation of solar water heaters and to provide households with no access to surface area on which to install Photo Voltaic technology with access to the surface area of public buildings.
Action 62	Government will continue to consider on-shore and off-shore wind technology as an important RES technology in so far that such an abatement measure is technically possible within the topographical constraints of Malta's terrain and sea area.
Action 63	Government will assess the potential application and use of low grade RES Geothermal technology.
Action 64	Government will continue to facilitate as appropriate the expansion of the Bio-fuel market subject that this is carried out within the constraints of the EU sustainability criteria for Bio-fuel and with such focus directed towards secondary Bio-fuel sources such as recycled domestic and industrial oil waste.
Action 65	The Malta Resources Authority will work with the appropriate private stakeholders to introduce autogas as an accessible and affordable substitute for fuel for vehicle drivers.

Action 66	Government will, with effect from 1st July 2010, repeal the current practice not to invoke legal provisions that mandate that buildings must have rainwater capture reservoirs and will ensure that existing legal provisions are enforced.
Action 67	Government will consider the introduction of a fiscal incentive directed at domestic users to promote the integration of water captured in wells with the plumbing system for secondary use.
Action 68	The Water Services Corporation will continue to review the technology of its Reverse Osmosis plants to apply innovation and introduce improvement through technical design modifications to reduce further the energy utilised for the production of potable water.
Action 69	The Water Services Corporation will continue to review the water transfer and distribution network to apply innovation and introduce improvement through technical and design modifications to reduce the demand per cubic meter of water produced and distributed.

06. Agriculture and Waste Abatement Measures

In June 2008 the Government prepared an Agriculture Waste Management Plan (AWMP) (http://mrta.gov.mt/htdocs/docs/agri_waste_mgmt_plan.pdf).

The plan recommends that:

A new plant is developed in Gozo for the combined treatment of municipal solid waste and manure / slurries.

The construction of a regional manure treatment plant in the north of Malta to treat the manure generated in the north of Malta, to be combined with the WasteServ Ltd manure biological treatment plant for municipal solid waste in Malta north. This plant will treat approximately 30% of all the manure and slurry generated in Malta.

The construction of a regional manure treatment plant in Siggiewi to treat the manure and slurry generated in the north west, central and south of Malta. This plant will treat approximately 25%-35% of all the manure and slurry generated in Malta.

In January 2009, the Government presented for public consultation 'A Solid Waste Management Strategy for the Maltese Islands'. The strategy identified that Malta has the potential for separate collection subsequent recovery of up to 36,000 tonnes of recyclables.

Moreover, the Government has also embarked on a strategy to manage GHG emissions emitted from landfill sites. With regards to the closed Magħtab and Qortin landfill sites, WasteServ Ltd have installed a landfill gas extraction infrastructure to treat odour and noxious emissions by means of a regenerative thermal oxidiser as well as the re-contouring works of the terrain to improve the stability of the waste mass and control emissions.

Work has also been carried out in relation to gas management at Ta' Zwejra and Għallis landfills. In this regard capping and waste gas extraction from the Ta' Zwejra landfill site is planned to be in place by 2010 whilst activity from the Għallis site is planned to initiate in a phased manner in 2011.

With regards to the use of agriculture and waste abatement measures the following approach will be adopted:

The commissioning and operation of agricultural waste treatment plants that generate energy are seen to be a strategic component in the strategy to be adopted to reduce Malta's GHG emissions and to partially remove nitrogen in manure.

The broadening of the waste recovery process will be broadened to include separate collection and subsequent recovery of recyclable waste and of clean organic fraction.

The investment in appropriate infrastructure to enable for thermal treatment of waste.

The use of treated effluents for irrigation subject that this is outside of the groundwater zone and that the distribution infrastructure renders value for money.

Continued investment to reduce GHG emissions and generate energy from landfills.

The Strategy embraces the following action:

Action 70	The Ministry for Resources and Rural Affairs will proceed with the implementation of the Agricultural Waste Management Plan with an objective of generating 33,000MWh annually and removing 50% of nitrogen in manure.
Action 71	The Ministry for Resources and Rural Affairs will continue to reinforce the growing success of the programmes for the collection and recovery of recyclable municipal solid waste.
Action 72	The Ministry for Resources and Rural Affairs will seek, by 2015, to broaden the recovery process to include separation collection and subsequent recovery of up to 36,000 tonnes of recyclable waste and 35,000 tonnes of clean organic fraction.
Action 73	Government will seek, by 2013, to build the appropriate infrastructure to enable the thermal treatment of waste.
Action 74	Government will seek to pursue the use of treated effluents for secondary purposes by industry subject that such use takes place outside of the groundwater zone and the distribution network provides value for money.
Action 75	WasteServ Malta Ltd will continue to invest to extract malodorous and noxious gas emissions from closed landfills such as Magħtab and Qortin landfills.
Action 76	WasteServ Malta Ltd will continue to invest to cap and extract gases from the Ta' Zwejra and Ghallis landfills.

07. Transport Abatement Measures

The Strategy embraces the following action:

Action 77	The Malta Transport Authority will, at the first instance, seek to resolve traffic bottlenecks in critical road networks by considering options such as variable lanes, intelligent lights, traffic information et al and will only embark on the expensive capital construction of junctions as a last policy option choice.
Action 78	The Malta Transport Authority will consider, where so appropriate, introducing a middle third lane for alternate bi-directional use as a means to reduce congestion.
Action 79	The Malta Transport Authority will consider the introduction of flexible bi-directional lane management on arterial roads that can feasibly and cost effectively accommodate such a concept in order to reduce traffic congestion during peak hours.
Action 80	The Malta Transport Authority will consider the introduction of intelligent traffic lights as and where appropriate.
Action 81	The Ministry for Infrastructure, Transport and Communications will consider the setting up of a traffic information centre, if so possible with private stakeholders, as a means to reduce traffic congestion by keeping the public updated of the traffic flow situation and re-routing as appropriate.
Action 82	Local government and government entities are to be encouraged to schedule non-urgent and non-critical repair and maintenance works in non traffic peak hours in order to remove 'artificially' created bottlenecks.
Action 83	The Office of the Prime Minister and the Ministry of Education will discuss, as appropriate, the staggering of official working and school hours with the appropriate unions as a means to alleviate congestion at certain hours of the day.
Action 84	Government will continue to promulgate the implementation of tele-working; a measure which should be adopted by the private sector.
Action 85	The Ministry for Infrastructure, Transport and Communications will continue to proceed with the implementation of public transport reform.
Action 86	The Ministry for Infrastructure, Transport and Communications will continue to proceed to build a network of water taxis in the Grand Harbour and Sliema Creek areas respectively.

Action 87	All means of public transport are to be equipped with remote telemetry devices so as to provide real-time information on the estimated time of arrival at designated stops so as to provide a more efficient integrated public transportation system and in doing so encouraging increased use of public transportation.
Action 88	The Ministry for Infrastructure, Transport and Communications will continue to proceed with its strategy to introduce a new fleet of buses of different passenger capacities in line with the type of route served.
Action 89	The Malta Transport Authority will encourage further take up of electrically powered taxis as currently servicing the Valletta Park and Ride system.
Action 90	The Malta Transport Authority and the Ministry for Gozo, consistent with the Government's strategy to establish Gozo as the Eco-Island, will seek to introduce buses with the highest level of eco-friendly automobile standards in Gozo by 2016.
Action 91	The Ministry for Infrastructure, Transport and Communications will seek to introduce, as and where appropriate, further park and ride systems to service major town shopping and other business communities in order to reduce congestion and unnecessary mileage in the search for parking.
Action 92	The Malta Transport Authority will consider and assess the introduction of equipping heavy commercial vehicles with telemetry devices to measure CO ₂ emissions in order to regulate emissions against maximum thresholds and to ensure compliance as appropriate.
Action 93	The Malta Transport Authority will continue to closely follow development in the EU vis-à-vis hydrogen vehicles and the supporting filling network.
Action 94	The Malta Transport Authority and the Climate Change Division will carry out a study, by end 2010, to determine whether ICT can act as an enabler for a successful car pooling scheme and recommend next steps in this regard.
Action 95	The Malta Transport Authority will continuously liaise with appropriate stakeholders to determine how cycling, as a form of commuting, can be supported further and implement measures as and where appropriate.
Action 96	The Malta Transport Authority, with the assistance of the Climate Change Division, will review and analyse viable electrical and alternative modes of vehicle transport and establish a framework directed to promulgate the up-take of alternative technology powered vehicles.

08. Next Steps

The Strategy presented in this document portrays an ambitious array of activity. The range of measures proposed in different policy domains demonstrates the complexity of the task ahead. In truth, however, it is pertinent to underline that a number of actions identified in this Strategy are already under way. Examples include:

Energy supply side infrastructure by Enemalta Corporation.

Energy demand management by Enemalta Corporation.

Improvement of Reverse Osmosis water production and the strengthening of the water distribution network by Water Service Corporation.

Waste management reform by WasteServ Ltd.

Public transport reform by . Malta Transport Authority

Education campaigns by the Ministry of Resources and Rural Affairs

It is recognised, however, that in certain cases the resulting impact on Greenhouse Gas emissions reductions is a by-product rather than a primary goal of the activity underway. For example, in terms of electricity generation and distribution the primary goal is that of ensuring continuity of electricity supply.

Thus, the Strategy seeks to coalesce such activity into an integrated whole: where the resulting reduction of Greenhouse Gas emissions from such major national activities becomes, in its own right, a primary focus that maintains and retains its importance within the strategic goals set for each related programme embarked upon by the responsible entity.

The first challenge is that of securing cohesion and coherency in policy decisions relating to this broad range of actions in order to ensure consistency and continuity within each action and between actions. In this regard the constitution of the Inter-Ministerial Committee is considered a critical pivot to ensure that the various parts gel into one constituent part.

The second challenge is that of ensuring that focus is maintained, bottlenecks unblocked, issues resolved, lessons learnt, co-operation garnered, financing opportunities availed of, et al. In this regard the setting up of the Climate Change Division within the Malta Resources Authority will assume a strategic role which is critical to the effective management of the implementation of the Strategy. Moreover, the Climate Change Division will also assume a key role in the co-ordination of the policy design process.

The third challenge is that of ensuring that the economics of Climate Change is grafted within the policy decision making process. As repeatedly underlined, achieving a reduced Greenhouse Gas emissions footprint by 2020 within the parameters of the EU Climate Change framework will be an expensive task.

It is, therefore, imperative that the right decisions are made in terms of which abatement measures one is to invest in – and that such investment is to result in the highest reduction of tCO₂e for every €1 invested in such a measure – and where it is more appropriate to invest in carbon credits or green certifications as against capital investment. The building of the appropriate human capital within the appropriate government entities together with the necessary decision assisting tools is a strategic requirement that needs to be effected as early as possible.

This Strategy is, also, about behavioural change: that as enterprises and citizens our actions result in a negative impact on Climate Change and Greenhouse Gas emissions irrespective of measures taken centrally or locally by government. Securing civil society and individual participation by, on the one hand, ensuring that they are continuously actively involved in the decision making process and by, influencing their behaviour through knowledge, education, information, communication and market incentives is, therefore, also of strategic importance. The constitution of the Climate Change Consultative Council can assume an important leadership role in this policy domain once it is constituted.

Finally, it is to be noted that the actions proposed in this Strategy are nationally directed – and in this regard it has made no specific reference to actions that should be directed solely towards Gozo as the designated Eco-Island. In this regard, nevertheless, it is proposed that the process to pilot in Gozo the following actions can be initiated in 2010:

Action 37	Piloting of market incentives to enterprises which have generation capacity to covert to gas.
Action 38	Piloting of marketing incentives for improvements in energy auxiliaries and replacement of inefficient equipment.
Action 45	Piloting of Smart Street Lighting Grid for arterial roads.
Action 59	Piloting of use of public roofs for RES solar related technologies.
Action 60	Piloting of designated rehabilitated sites with appropriate infrastructure for commercial production.
Action 61	Piloting of auto gas.
Action 67	Piloting of market incentives for domestic re-use of water captured in wells.
Action 25	Piloting of introduction of CO ₂ footprint for Ministry and departments.
Action 2	Piloting of holistic knowledge, communication and information campaign.

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
01 Secure multi-party political support	High	MRRA												
02 Intensify Public Awareness Campaign	High	CCD												
04 Efficient Energy One Stop Shop	Medium	CCD												
06 Educational Strategy	High	CCD												
07 National Policy on Environment Education	High	MoE CCD												
08 Constitute Climate Change Consultative Council	High	CCD												
09 Review National Strategy	High	CCD CCCC												
10 Setup Inter-Ministerial CC Committee	High	OPM												
11 Introduce policy design and project identification framework	High	MRRA; CCD; WSC; MTA; EMC; MMA; Wasteserv												
13 Setup Climate Change Division within MRA	High	OPM MRRA												
14 Designated National Authority	High	OPM MRRA												
16 Design Research & technology innovation strategy on CC	Medium	MRRA; MRA												
17 Strengthen GHG Inventory system under CCD	High	CCD												
18 Ensure R&D&I strategy directed at the right technologies	Medium	CCD; Private Sector												
19 Seek financing for R&D&I	High	CCD												
20 Undergraduate course content on CC disciplines	Medium	CCD JoM												
21 Priority ranking for CC scholarships	Medium	CCD MoE JoM												
22 Introduce MCAST courses on RES	Medium	MCAST CCD												
23 Internships in CC	Medium	Not applicable												
24 Survey Prices of Energy Efficient technologies	High	OFC												
25 Improved CC targets for heads of government entities	High	CCD; Gov Entities												
26 CC Target Attainment list for all government entities	High	CCD; Gov Entities												
27 Build R&D&I capabilities in Utilities	Medium	CCD; WSC; Ensmalta												
28 Direct efforts towards most "effective" abatement efforts	High	CCD App Entities												
31 Establish a Shadow Price of Carbon	High	CCD EPD												
32 Graft economics of CC on to budgetary framework	High	MFEI; CCD												
33 Introduce appropriate statistical CC domains	High	CCD; NSO; ETC												
34 Ensure additional power plants operational	High	EMC												
35 Complete Feasibility study re Natural Gas	High	EMC												
36 Sub-sea electricity inter connector	High	EMC												
37 Incentive Scheme towards heavy industrial consumers	Medium	MFEI; MRA; Private Sector												
38 Review of energy auxiliaries for major industrial installations	Medium	Private Sector												
39 Implementation of Smart Meters	High	Utilities												
40 Price of electricity to reflect true cost	High	MRA; EMC												
41 Policy for financing of Replacement of white/brown goods	High	MFEI; MRA; CCD												
42 Business Advisory Scheme	High	MFEI MRA												

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
43 Differentiated Tariffs	Medium	MRA Utilities												
44 Incandescent Lights	Medium	MRA CCD												
45 Smart Street Lighting Grid	High	MITC Local Government												
47 Follow EU Commission re mobilising ICT to facilitate energy efficiency	Medium	MITC CCD												
48 Disseminate information regarding Eco Design of Energy Using Products	Medium	MSA CCD												
49 Facilitate uptake of A+ and A++ appliances	High	MRA CCD												
50 Energy Efficiency on all domestic and commercial appliances	High	CCD												
51 Energy Efficiency Performance in Buildings Framework	High	MRA; BICC; CCD; Prof Bodies												
52 Participate actively in recast proposal for EEPBF	High	MRA; BICC; CCD; Prof Bodies												
54 Seamless plug-in of RES	Medium	MEPA; CCD												
55 National Policy for Zero Energy Buildings	High	MRA; BICC; MEPA; Constituted												
56 Strategy for uptake of solar energy abatement measures	High	MRA CCD												
57 Strategic Initiative for solar technology penetration	High	MRA CCD												
58 Capital financing and FIT for PV technology	High	MRA CCD EMC												
59 Utilise roofs of public buildings for PV	Medium	MRA CCD												
60 Designate land sites suitable for alternative technology	High	MRA CCD MEPA												
61 Right of Servitude and alternative surface area for RES	Medium	MRA CCD												
62 Wind technology	High	MRRA MRA												
63 Geothermal systems	Low	MRA CCD												
64 Continue to expand bio-fuel market	Medium	MRA CCD												
65 Introduce Autogas	Medium	MRA CCD												
66 Enforce Legislation mandating rainwater capture reservoirs or wells	High	MEPA CCD												
67 Introduce incentive scheme to integrate well water	High	MRA CCD												
68 Review RO technology	High	WSC												
69 Review water transfer and distribution network	High	WSC												
70 Agriculture Waste Management Plan	High	WasteServ Ltd EMC												
71 Collection and recovery of recyclable municipal solid waste	High	WasteServ Ltd												
72 Broaden recyclable waste scheme	High	WasteServ Ltd												
73 Introduce Thermal treatment of waste	High	WasteServ Ltd												
74 Use treated effluents for irrigation	High	WasteServ Ltd WSC												
75 Continue with investment to extract gas from landfills	High	WasteServ Ltd												
76 Continue with investment to cap and extract gases from Hazardous landfills	High	WasteServ Ltd												
77 Bottleneck junctions given priority in road infrastructure upgrade programme	High	MTA MITC												
78 Reconsider policy of building single lane roads	High	MTA MITC												
79 Consider introduction of traffic direction variable lanes	High	MTA MITC												
80 Introduce intelligent traffic lights	Medium	MTA MITC												

Action	Priority	Owner	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
81 Setup traffic information centre	Medium	MTA MITC												
82 Schedule repair and maintenance of roads in non-peak hours	Medium	Government Entities Local Gov.												
83 Consider staggered hours for Government employees & Schools	Medium	Government Unions												
84 Encourage more widespread use of teleworking	Medium	OPM; Gov Entities; Private Sector												
85 Introduce inter-community transportation	High	MITC; Private Sector												
86 Introduce water taxis	High	MITC; Private Sector												
87 Equip public transport with remote telemetry devices	High	MTA MITC												
88 Renovate and diversify Public Transport fleet	High	MTA; MITC; Private Sector												
89 Further introduction of electrically powered taxis	High	MTA; MITC; Private Sector												
90 Consider introducing Electric or LPG powered buses in Gozo	High	MTA MITC Min. for Gozo												
91 Introduce further park and ride schemes	High	MTA; MITC; Private Sector												
92 Equip heavy Commercial vehicles with remote telemetry	High	MTA; MITC; Private Sector												
93 Hydrogen powered vehicles	Low	MTA MITC												
94 Car Pooling	Medium	MTA MITC CCD												
95 Cycling	Low	MTA MITC CCD												
96 Maintain watching brief on the development of electric vehicles	High	MTA MITC CCD												

Appendix I – Reconciliation between CCC Report Recommendations and Government intended Actions

Recommendation	Action
<p>Recommendation 01 Section 01.4</p> <p>The Climate Change Committee report should be published to stimulate an intensive National discussion and consultation process – which would act as the spur for the sustained dissemination of knowledge and participation in this important policy domain.</p>	<p>Action 3</p> <p>Civil society such as Trade Unions and constituted bodies representing employers for example should assume an active leadership role in promulgating and shaping behaviour, culture, norms, work practices et al in relation to Climate Change and green issues by means of leveraging their respective reach of cohorts of society and the mobilisation of their respective resources to achieve such a goal.</p> <p>Action 8</p> <p>The Ministry for Resources and Rural Affairs will establish a Climate Change Consultative Council which will be constituted of NGOs, the private sector, government, local government, constituted bodies, political parties and related institutions so that a permanent and robust consultative platform that assures sustained active participation of civil society is achieved. The Climate Change Consultative Council will establish a virtual network to enable entities involved in Climate Change activity to synergise their work thus securing continuity over time by allowing for new work to build on past initiatives and efforts.</p>
<p>Recommendation 02 Section 02.8</p> <p>Given the economic impacts of Climate Change it is imperative that the necessary governance, policy and investment in capacity are made by the Government to ensure that Malta has a robust and effective GHG Inventory system.</p>	<p>Action 17</p> <p>The Climate Change Division will assume responsibility for the National Inventory for GHG emissions and will establish the strengthening of the said Inventory as a strategic objective.</p>
<p>Recommendation 03 Section 02.9</p> <p>Given the strategic importance of the maritime sector to Malta – both in terms of its economic and social activity as well as with regards to the Maltese Maritime Flag – the Government should maintain a position that action taken with regards to maritime Greenhouse Gases emissions is on the basis of an international agreement that includes the International Maritime Organisation; so that abatement measures are agreed to secure a level playing ground for Malta and thus minimise any consequential negative impacts.</p>	<p>Incorporated within Actions 10, 11 and 12.</p>
<p>Recommendation 04 Section 02.10</p> <p>Given the potential impact on Malta's national airline as a consequence of integrating the aviation sector within the European Emissions Trading Scheme the Government should, following the signing of the Blue Med Declaration on the creation of a Mediterranean Functional Airspace Block, continue to work actively at all levels for the swift implementation of the Single European Sky.</p>	<p>Incorporated within Actions 10, 11 and 12.</p>
<p>Recommendation 05 Section 02.11</p> <p>The Government should strengthen its strategic, institutional and promotional capacity in order to establish a vibrant Clean Development Mechanism framework in Malta, and in so doing secure a synergy between government entities such as MEPA, EuroMedITI Ltd, appropriate government entities and the private sector in order to optimise opportunities available to Malta through the Clean Development Mechanism.</p>	<p>Action 14</p> <p>The Climate Change Division will assume the status of the Designated National Authority for the United Nations Framework Convention on Climate Change which currently rests with the Malta Environment and Planning Authority.</p>
<p>Recommendation 06 Section 02.13</p> <p>The Ministry for Resources and Rural Affairs should establish a virtual network on Climate Change that will allow research institutions, government entities and ad hoc initiatives such as the Climate Change Committee to synergise their work, as well as to complement and supplement their work, thus securing continuity over time, by allowing for new work to build on past initiatives and efforts.</p>	<p>Integrated in Action 8.</p>

Recommendation	Action
<p>Recommendation 07 Section 03.3</p> <p>The electricity sector, with particular reference to the Emissions Trading Scheme, should constitute the primary focus of concentrated efforts to reduce CO₂ emissions and in doing so the Government should adopt a strategy that directs efforts towards those abatement measures that will render the highest level of tCO₂e reduction for each €1 of investment made.</p>	<p>Action 28</p> <p>The electricity sector, with particular reference to the Emissions Trading Scheme, should constitute the primary focus of concentrated efforts to reduce CO₂ emissions and in doing so efforts will be directed towards policy and abatement measures that will render the highest level of tCO₂e reduction for each €1 of investment made.</p> <p>Action 29</p> <p>Government recognises that, in embarking on abatement measures, it may be the case that the purchase of carbon credits from international markets may be far more cost effective than embarking on a local high cost and high maintenance investment in Malta and therefore such decisions are to be based on the net value benefit to Malta.</p> <p>Action 30</p> <p>The Climate Change Division working with the Economic Planning Division and other appropriate government entities is to design a strategy that sets out when and how government entities are to invest in carbon credits in order to ensure that such credits are purchased under conditions that are favourable to Malta.</p>
<p>Recommendation 08 Section 03.3</p> <p>The Ministry of Finance, the Economy and Investment should establish a Shadow Price of Carbon for Malta by June 2009.</p>	<p>Action 31</p> <p>The Climate Change Division will work with the Economic Planning Policy Division to introduce a National Shadow Price for Carbon together with mechanisms for its ongoing review by July 2010.</p>
<p>Recommendation 09 Section 03.3</p> <p>The Management Efficiency Unit within the Office of the Prime Minister should be tasked to work with the Ministry of Finance, the Economy and Investment to introduce by June 2009 policy and supporting guidelines for the consistent and mandatory application of a Shadow Price of Carbon by public entities in the evaluation and assessment of policy and investments that have a significant carbon or other GHG impact.</p>	<p>Action 11</p> <p>Climate Change Policy Analysts will be appointed in the Malta Transport Authority, Enemalta Corporation, WasteServ Malta Ltd, Water Services Corporation and the Malta Maritime Authority to ensure that policy initiatives within these entities are designed in accordance to national direction on Climate Change.</p>
<p>Recommendation 10 Section 03.3</p> <p>In an ambience where international, supra-national, and regional frameworks and policies on Climate Change have a pervasive impact on national finances and economics, the Government should, at the earliest opportunity possible, graft the economics of Climate Change onto both the national budgetary and macro- and micro- economic planning framework.</p>	<p>Action 32</p> <p>The Ministry of Finance, the Economy and Investment will study the possibility of grafting the economics of Climate Change onto both the national budgetary and macro and micro economic planning framework with the possibility of introducing such a planning mechanism by 1st January 2013 – the coming into effect of Phase III of the Emissions Trading Scheme. In doing so, the Ministry will seek to strengthen the central economic and budget planning functions as appropriate.</p>
<p>Recommendation 11 Section 03.3</p> <p>The Government should build a strong indigenous Climate Change budgeting and economic planning capacity within the Ministry of Finance, the Economy and Investment as well as such capacity within the Enemalta Corporation, Malta Resources Authority, and Malta Transport Authority.</p>	<p>Incorporated in Actions 11 and 33.</p>
<p>Recommendation 12 Section 03.3</p> <p>The Ministry for Resources and Rural Affairs should establish and lead a Working Group with the support of the National Statistics Office and including key stakeholders in order to establish, by no later than December 2009, a national statistics framework for Climate Change.</p>	<p>Action 33</p> <p>The Climate Change Division is to lead a Working Group constituted of the National Statistics Office and other appropriate stakeholders that will introduce, in a phased manner, a national statistical framework on Climate Change by end 2012.</p>
<p>Recommendation 13 Section 04.1</p> <p>This National Strategy for Policy and Abatement Measures Relating to the Reduction of Greenhouse Gases (NSPAM) should be continuously under review so that it is calibrated on an on-going basis to reflect new circumstances and emerging technologies. The first review should take place in 2012.</p>	<p>Action 9</p> <p>The Strategy for Policy and Abatement measures relating to the reduction of GHG emissions will be on a rolling annual basis and will be reviewed on a three year basis with the first review to take place by the end of 2011.</p>
<p>Recommendation 14 Section 04.1</p> <p>The Minister responsible for Resources and Rural Affairs should give positive consideration to the tabling of this report at the House of Representatives for discussion and subsequent approval in order to signal in the most demonstrative manner possible that the politics of Climate Change is above partisan politics.</p>	<p>Action 1</p> <p>Achieving the culture change necessary through the promotion of ethical behaviour and a value system on Climate Change and environmental issues is a long term process which would benefit if multi party political support is secured.</p>

Recommendation	Action
<p>Recommendation 15 Section 04.1</p> <p>Given the transcending impact of Climate Change across most sectors of public policy and government operations, the Government should consider constituting a high powered Inter-Ministerial Committee for Climate Change at the earliest opportunity possible with the task of securing cohesion and congruency amongst the political and administrative stakeholders, establish political and administrative priorities, and maintain political stewardship and pressure for the adoption of the appropriate abatement measures.</p>	<p>Action 10</p> <p>An Inter-Ministerial Committee on Climate Change and Energy under the stewardship of the Prime Minister will be constituted to ensure joined-up policy design and implementation.</p>
<p>Recommendation 16 Section 04.1</p> <p>The necessary leadership and organisational capacity to drive and sustain Climate Change measures is established in 2010 by means of the consolidation of related functions spread across various government departments and entities in a Department for Climate Change within the Ministry for Resources and Rural Affairs.</p>	<p>Action 13</p> <p>The Climate Change Unit of the Malta Environment and Planning Authority will be consolidated within the Climate Change Division that is to be established within the Malta Resources Authority.</p> <p>Action 15</p> <p>The Climate Change Division will have a resources capacity of 16 Full Time Equivalent staff and will focus on four areas: (a) strategy, policy and economics; (b) programme management; (c) education and communications; and (d) technology and research.</p>
<p>Recommendation 17 Section 04.2</p> <p>Appropriate government stakeholders are urged to assume a leadership role in implementing the recommendation of the National Strategic Plan for Research and Innovation: 2007 – 2010 to design by 2010, and implement by 2015 an R&D&I strategy for the designated Environment and Energy Resources platform of strategic importance.</p>	<p>Action 16</p> <p>The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead to design an R&D&I Strategy for Malta on Climate Change and Environment Technologies and Resources by 2010.</p>
<p>Recommendation 18 Section 04.2</p> <p>The Environment and Energy Resources vertical R&D&I strategy should seek to direct financing of research towards elements that have a direct impact on energy conservation, measures to reduce CO₂ emissions from entering into the atmosphere, measures directed to optimise the use of new renewable technology in Malta's sea territory, and measures directed to develop an indigenous bio-fuel source through marine algae.</p>	<p>Action 19</p> <p>The Climate Change Division working in close liaison with knowledge institutions, research bodies, et al will take the lead in preparing submissions for financing under schemes such as ERDF, ESF, IEE, etc for R&D&I of indigenous solutions related to Climate Change and Environment Technologies and Resources.</p>
<p>Recommendation 19 Section 04.2</p> <p>The organisational capacity for R&D&I in the energy and water utilities in Malta should be strengthened and significant financing, as from 2010, should be made available to allow them to undertake field R&D&I that will enable them to experiment with techniques, processes, et al that may result in more efficient measures on energy generation and Reverse Osmosis energy conservation.</p>	<p>Action 27</p> <p>The R&D&I capacity of public entities such as Enemalta Corporation and Water Services Corporation is to be strengthened to allow them to undertake applied R&D&I on processes, techniques and plant to induce efficiency measures in respect to energy and water generation / production and distribution.</p>
<p>Recommendation 20 Section 04.3.1</p> <p>The installation of the new 100MW – 150MW generation plant at Delimara Power Station is a strategic national abatement project that would directly reduce CO₂ emissions and the regulatory and implementation process should be given intra-government fast track processing, similar to other national projects, so that the plant is operational as planned in 2011.</p>	<p>Action 34</p> <p>Government re-affirms its decision to invest, during the period 2009 and 2015, in modern electricity generation plant and appropriate GHG abatement technologies subject to the essential condition that such generation technology can be converted to operate on natural gas; should a decision be reached to power the generation plants by natural gas.</p>
<p>Recommendation 21 Section 04.3.1</p> <p>The substitution of fuel oil to natural gas for the powering of the generation plants is to be considered as a national strategic abatement initiative which will have a significant impact on Greenhouse Gases emissions, and thus, the appropriate mobilisation is embarked upon to secure that the necessary infrastructure and logistical capacity as well as the appropriate conversion technologies requiring installation at the plants are in place by 2015.</p>	<p>Action 35</p> <p>Government will reach a decision on whether to invest in the appropriate infrastructure to power the generation plants by means of natural gas only once it is conclusively shown that the implementation of this adaptation measure will provide the most appropriate return in tCO₂e reductions for every €1 invested – with a target implementation date set at 2015.</p>
<p>Recommendation 22 Section 04.3.1</p> <p>Major enterprises and industries that have their own generation capacity should undertake the appropriate analysis to seriously consider substitution of fossil oil by natural gas in order to generate, in part or in full, their energy needs.</p>	<p>Action 37</p> <p>The Climate Change Division will study the possibility of introducing incentives to large industrial concerns to assist them in building their own energy generation plants or, where such plants already exist, to improve the technology on the basis that (a) such distributed generation plants are designed to Best Available Technology; and (b) that such distributed generation plants are capable of conversion to natural gas.</p>

Recommendation	Action
<p>Recommendation 23 Section 04.3.1</p> <p>The establishment of a sub-sea electricity inter-connector between Malta and Sicily, unless new research findings indicate differently, is to be considered as a national strategic abatement initiative which will have a significant impact on Greenhouse Gases emissions, and, thus, the appropriate mobilisation is embarked upon to secure that the necessary infrastructure is in place by the earliest possible date.</p>	<p>Action 36</p> <p>Enemalta Corporation, will, following the successful closure of discussions with appropriate regulatory authorities in the EU, proceed with the implementation of one 225MW / 250 MVA submarine interconnector to be in operation by 2012.</p>
<p>Recommendation 24 Section 04.3.1</p> <p>Major industrial installations should review their energy auxiliaries and replace inefficient equipment by new advanced technology to, on the one part, reduce their energy demand, and, on the other part, act as a Greenhouse Gas abatement measure.</p>	<p>Action 38</p> <p>Industrial concerns should review their energy auxiliaries and replace inefficient equipment by new advanced technology to, on the one part, reduce their energy consumption, and on the other part, to act as a GHG abatement measure.</p>
<p>Recommendation 25 Section 04.3.2</p> <p>The implementation of the smart electricity and water meters is to be considered as a national strategic abatement initiative, which will have a significant impact on Greenhouse Gases emissions through the implementation of direct demand management, and thus, it is essential that the appropriate mobilisation is embarked upon to secure that the targeted successful closure of the initiative by 2012 is met.</p>	<p>Action 39</p> <p>The Automated Revenue Management Systems Ltd, will seek to nationally implement the Smart electricity and water meter grid by June 2011.</p>
<p>Recommendation 26 Section 04.3.3.1</p> <p>The price of electricity generated and distributed by the Utility should always reflect the true cost, though excluding inefficiencies, of generation so that behavioural change in terms of both consumption patterns and of investment in alternative technologies is induced.</p>	<p>Action 40</p> <p>Government reconfirms its policy decision that the price of electricity generated and distributed by Enemalta Corporation should reflect the true cost – excluding inefficiencies that are within the power of management to address – so that behavioural change in terms of consumption patterns and of investment in alternative technologies respectively is induced.</p>
<p>Recommendation 27 Section 04.3.3.2</p> <p>The cost-benefits of replacing the current Energy Benefit support policy, in part or in whole, by a policy that finances the capital investment of replacing old white / brown goods and lighting et al to modern energy efficient appliances, within those households designated to be within a fuel poverty category, should be evaluated on the basis of the Shadow Price of Carbon by Government in 2009.</p>	<p>Action 41</p> <p>The Climate Change Division will study the possibility of replacing the current energy benefit support policy, in part or in whole, by a policy that will provide households benefiting from the existing scheme with energy efficient white goods. If introduced, such a policy will be directed to be equivalent in terms of support to that which is currently received by households as compensation benefit, in part or in whole, would stem from reduced energy bills due to the use of more efficient energy appliances.</p>
<p>Recommendation 28 Section 04.3.3.2</p> <p>The Climate Change Committee positively notes the introduction, in the 2009 National Budget, of the Business Advisory Scheme to support industry and enterprise in the undertaking of energy audits, and proposes, given this is a significant positive abatement measure for the reduction of CO₂ emissions, that the scheme should be maintained in the long term and continuously strengthened in terms of the quantum of fiscal support provided.</p>	<p>Action 42</p> <p>Government will continue to support the Business Advisory Scheme introduced in the 2009 National Budget to support industry and enterprise to undertake energy audits.</p>
<p>Recommendation 29 Section 04.3.3.3</p> <p>The Government should, dependent on the pace of roll-out of the Smart Meter technology, design a policy of differentiated tariffs resulting in lower pricing for electricity consumed during non-peak hours.</p>	<p>Action 43</p> <p>The Ministry for Infrastructure, Transport and Communications will, introduce differentiated tariffs to encourage the shifting of consumption demand from peak times to non-peak times during base load once the Smart electricity and water meter grid is introduced nationally.</p>
<p>Recommendation 30 Section 04.3.3.4</p> <p>An Efficient Energy One Stop Shop Portal is set-up within the Department of Climate Change to provide a continuous review of existing technologies, new technologies, emerging technologies, their impact in terms of €/kW saved, CO₂ emissions abated, prices, and self service market for the on-line procurement of such technologies directly from technology suppliers and providers locally as well as overseas and to electronically integrate all government Climate Change related back-office interaction – whether this relates to Enemalta Corporation, MRA, MEPA and fiscal incentives - so that regulatory and procedural processes are cleared within fast service times.</p>	<p>Action 4</p> <p>An Efficient Energy One Stop Shop Portal is set up within the Climate Change Division within the Malta Resources Authority to provide the public with access to knowledge and information relating to existing technologies, new technologies, emerging technologies, their impact in terms of €/kW saved, CO₂ emissions abated, etc and to electronically integrate all government Climate Change related back-office interaction.</p>

Recommendation		Action
Recommendation 38	Section 04.3.3.5 The Government should review the appropriate planning policies to introduce, in January 2010, the necessary amendments that will mandate that all development and re-construction works related to buildings are constructed with the appropriate plumbing insulation works to allow for the seamless plugging-in of solar related alternative technology solutions.	Action 54 The Climate Change Division together with appropriate entities will assess how best to implement a policy that would see all new development as well as re-construction works on buildings are constructed with the appropriate plumbing installation works that will allow for the seamless plugging-in of solar related alternative technology equipment.
Recommendation 39	Section 04.3.3.5 The appropriate Government entities should hold discussions with the University of Malta on (a) whether the undergraduate course content should be strengthened in terms of energy-efficiency building design; and (b) the introduction of postgraduate programmes specialising in the discipline within the Mediterranean generally and Malta specifically.	Action 20 The Climate Change Division will work with knowledge institutions such as the University of Malta to see how appropriate under-graduate programmes can be strengthened by introducing modules or electives on Climate Change disciplines. Action 53 The Climate Change Division will hold discussions with the University of Malta to (a) determine how undergraduate course content can be strengthened in terms of energy efficiency building design; and (b) introduce post-graduate programmes specialising in the discipline within the Mediterranean generally, and Malta specifically.
Recommendation 40	Section 04.3.3.5 The appropriate government entity should hold discussions with the Ministry of Education to obtain priority ranking in request for sponsorship through the Malta Government Scholarship Fund in postgraduate studies on energy efficient building design.	Action 21 The Climate Change Division will work with the Ministry of Education to obtain priority ranking in request for sponsorship through the Malta Government Scholarship Fund for postgraduate studies on Climate Change disciplines.
Recommendation 41	Section 04.3.4 Malta's approach to the application of Renewable Energy Sources must be a mix of the most applicable technologies that are most suited for Malta: balancing within such a mix all types of technologies available today and in the future.	This principle is re-affirmed.
Recommendation 42	Section 04.3.4.1 Photo Voltaic technology should be one of the strategic technologies of the renewable energy sources technology mix and directed to achieve 4% of the 10% reduction of energy generation through renewable energy sources.	Action 56 Government will seek to achieve, as a minimum, a 4% reduction in energy generated by fuel oil by means of alternative renewable forms of solar technologies.
Recommendation 43	Section 04.3.4.1 Government in 2009 should transfer the policy instrument vis-à-vis Photo-Voltaic technology penetration into a strategic initiative directed to achieve 75% of the 4% Photo-Voltaic energy generation by 2012: that is prior to the start of Phase III of the European Trading Emission Scheme.	Action 57 Government will incentivise, as appropriate, the use of all forms of solar energy technologies - directing, however, market incentives to those forms of solar energy technologies that will result in the highest tCO ₂ e reduction for each €1 invested in such RES solar technology.
Recommendation 44	Section 04.3.4.1 The Government should carry out an assessment, that incorporates the Shadow Price of Carbon, on the introduction of a strategic initiative that seeks to achieve 75% of the 4% energy generated through PV technology by 2012 directed towards: (a) Domestic users: through the financing of 60% of the capital and installation costs of the PV technology. (b) Industrial and enterprise users: the introduction of a feed-in-tariff scheme that is <i>significantly</i> more attractive to that in place today.	Action 58 Government will continue with the current strategy of financing in part the capital costs of RES solar technology for domestic users and will introduce as appropriate a market incentive mechanism for industrial and enterprise users that is significantly more attractive to that in place today.
Recommendation 45	Section 04.3.4.1 The surface area on roofs of public buildings and of buildings and public areas in Industrial Parks and Estates should be optimised so that their surface area is made available for the accelerated penetration of Photo-Voltaic technology.	Action 59 Government will consider the use of surface areas of public buildings for use for the accelerated deployment of Photo Voltaic technology.
Recommendation 46	Section 04.3.4.1 In order to further establish access to renewable energy by industry and commercial entities, the Government should designate land sites suitable for alternative technology. These sites should meet all planning requirements and have ready connectivity to the energy grid.	Action 60 Government will consider the rehabilitation of appropriate land sites for the deployment of RES technologies for use by industrial concerns, with such sites being made available with appropriate connectivity to the grid.

Recommendation		Action
Recommendation 67	Section 04.5.1	Action 81
The Government should consider setting up a traffic information centre to keep the Public updated on the traffic flow situation.		The Ministry for Infrastructure, Transport and Communications will consider the setting up of a traffic information centre, if so possible with private stakeholders, as a means to reduce traffic congestion by keeping the public updated of the traffic flow situation and re-routing as appropriate.
Recommendation 68	Section 04.5.1	Action 82
The Government and Local Councils should re-schedule repair and maintenance work to non-peak hours in order to reduce artificially created congestion and in this regard the respective employees' representatives should support the re-design of such work schedules.		Local government and government entities are to be encouraged to schedule non-urgent and non-critical repair and maintenance works in non traffic peak hours in order to remove 'artificially' created bottlenecks.
Recommendation 69	Section 04.5.2	Action 83
The Government, with the support of the relevant Unions, should consider staggering working hours of its officials working in Floriana and Valletta in order to alleviate congestion.		The Office of the Prime Minister and the Ministry of Education will discuss, as appropriate, the staggering of official working and school hours with the appropriate unions as a means to alleviate congestion at certain hours of the day.
Recommendation 70	Section 04.5.2	Action 83
The Government, with the support of the relevant employees' representative, should consider a staggered schedule for the start and close of schools in order to alleviate congestion.		The Office of the Prime Minister and the Ministry of Education will discuss, as appropriate, the staggering of official working and school hours with the appropriate unions as a means to alleviate congestion at certain hours of the day.
Recommendation 71	Section 04.5.2	Action 84
The Government should ride on its successes in the implementation of tele-working, and encourage more widespread use of this facility – a measure which should also be adopted by the private sector.		Government will continue to promulgate the implementation of tele-working as a measure which should be adopted by the private sector.
Recommendation 72	Section 04.5.3	Action 85
The Climate Change Committee supports the public transport reform recommendation presented by the Ministry for Infrastructure, Transport and Communications including the establishment of inter-community transportation which, were so appropriate, should be serviced by electric mini buses.		The Ministry for Infrastructure, Transport and Communications will continue to proceed with the implementation of public transport reform.
Recommendation 73	Section 04.5.3	Action 86
The Climate Change Committee supports the public transport reform recommendation presented by the Ministry for Infrastructure, Transport and Communications to establish that a Water Taxis system should be introduced to service the Grand Harbour and Sliema Creek area and adds that the assessment of the electric tram system, which is currently underway, should take into account the Shadow Price of Carbon.		The Ministry for Infrastructure, Transport and Communications will continue to proceed to build a network of water taxis in the Grand Harbour and Sliema Creek areas respectively.
Recommendation 74	Section 04.5.3	Action 87
All means of public transport should be equipped with remote telemetry devices so as to provide real time information on the estimated time of arrival at designated stops so as to provide a more efficient integrated public transportation system, thus encouraging more use of public transportation.		All means of public transport are to be equipped with remote telemetry devices so as to provide real-time information on the estimated time of arrival at designated stops so as to provide a more efficient integrated public transportation system and in doing so encouraging increased use of public transportation.
Recommendation 75	Section 04.5.4	Action 88
The Climate Change Committee agrees with the public transport reform strategy to introduce a new fleet of buses of different passenger capacities (in line with the type of route served) and adds that, to the extent possible, these should be powered by alternative technology and should incorporate the best carbon abatement technologies possible.		The Ministry for Infrastructure, Transport and Communications will continue to proceed with its strategy to introduce a new fleet of buses of different passenger capacities in line with the type of route served.
Recommendation 76	Section 04.5.4	Action 89
The Climate Change Committee proposes that complementary to the White Taxi reform strategy, the Government should encourage the further introduction of electrically powered taxis as currently servicing the Valletta Park and Ride system.		The Malta Transport Authority will encourage further take-up of electrically powered taxis as currently servicing the Valletta Park and Ride system.
Recommendation 77	Section 04.5.4	Action 90
The Government should, consistent with the Government's strategy to establish Gozo as the Eco-Island, consider introducing Electric or LPG powered buses in Gozo by 2016.		The Malta Transport Authority and the Ministry for Gozo, consistent with the Government's strategy to establish Gozo as the Eco-Island, will seek to introduce buses with the highest level of eco-friendly automobile standards in Gozo by 2016.

Recommendation	Action
Recommendation 78 Section 04.5.5 Riding on the success of the Park-and-Ride system for Valletta / Floriana, further Park-and-Ride systems should be introduced to service major town shopping and other business communities in order to reduce congestion and unnecessary mileage in the search for parking.	Action 91 The Ministry for Infrastructure, Transport and Communications will seek to introduce, as and where appropriate, further park and ride systems to service major town shopping and other business communities in order to reduce congestion and unnecessary mileage in the search for parking.
Recommendation 79 Section 04.5.6 The Government should introduce as a mandatory requirement that all heavy commercial vehicles be equipped with remote telemetry devices which measure CO ₂ emissions on a constant basis, whereby heavy commercial vehicles which surpass an agreed threshold of CO ₂ emissions will not be allowed to remain on the road unless works are performed on the vehicle to bring CO ₂ emissions in line within the maximum threshold, or the maximum load allowed for the vehicle is reduced.	Action 92 The Malta Transport Authority will consider and assess the introduction of equipping heavy commercial vehicles with telemetry devices to measure CO ₂ emissions in order to regulate emissions against maximum thresholds and to ensure compliance as appropriate.
Recommendation 80 Section 04.5.6 The Government should consider the more widespread use of pollution and emission monitoring stations, that apart from measuring air quality, also measure CO ₂ emission levels.	Action 93 The Malta Transport Authority will continue to closely follow development in the EU vis-à-vis hydrogen vehicles and the supporting filling network.
Recommendation 81 Section 04.5.7 The Climate Change Committee proposes that Malta closely follows developments in the EU vis-à-vis hydrogen vehicles and the supporting filling network and considers, where so appropriate, the potential piloting of such vehicles and infrastructure, primarily in Gozo, under EU financing schemes such as the City-VITALity-Sustainability (CIVITAS).	Action 94 The Malta Transport Authority and the Climate Change Division will carry out a study, by end 2010, to determine whether ICT can act as an enabler for a successful car pooling scheme and recommend next steps in this regard. Action 95 The Malta Transport Authority will continuously liaise with appropriate stakeholders to determine how cycling, as a form of commuting, can be supported further and implement measures as and where appropriate. Action 96 The Malta Transport Authority, with the assistance of the Climate Change Division, will review and analyse viable electrical and alternative modes of vehicle transport and establish a framework directed to promulgate the up-take of alternative technology powered vehicles.
Recommendation 82 Section 04.6 The Government should demand of its heads of entities, departments and authorities to meet the following targets as at 31 st December 2013 – on 2008 base figures: <ul style="list-style-type: none">Reduction in general carbon emissions where so appropriate: 15%Reduction in carbon emissions from government road vehicles: 12%Increase in energy efficiency: 10%Energy sourced from RES: 10%Reduction in waste: 5%Increased recycling: 10%Reduction in water consumption: 10%	Action 25 The Government will, with effect from 2011, request each Head of Government entities to draw up and implement an annual Carbon Footprint Reduction Plan that will target, amongst others, reduction in general CO ₂ emissions, reduction in government road vehicles emissions, reduction by means of increased energy efficiency, reduction by means of application of RES technologies and reduction in water consumption.
Recommendation 83 Section 04.6 The Government should establish a Climate Change Target Attainment list that ranks all government departments, entities and authorities on their respective performance on the Climate Change targets set for them for the period 1 st June 2009 to 31 st December 2013, with such list to be placed in the public domain annually.	Action 26 The Climate Change Division will monitor Carbon Footprint Reduction Plans drawn up by government entities and will annually publish the performance of each government entity against the Carbon Footprint reduction plan targets.
Recommendation 84 Section 04.7 An educational strategy that is based on the principles of accessibility of information, good practice, targeting specific consumer sectors, and that promotes the necessary culture change in how we look at and use energy, is designed by 2010 and aggressively embarked upon in a sustained manner as early as possible in that same year.	Action 6 An educational strategy that is based on the principles of accessibility of information, good practice, targeting specific consumer sectors, and that promotes the necessary culture change in how we look at and use energy, is designed by 2010 and aggressively embarked upon in a sustained manner as early as possible in that same year.
Recommendation 85 Section 04.7 Achieving the culture change necessary through the promotion of ethical behaviour and a value system on Climate Change and environmental issues is a long-term process which would benefit if multi-party political support is secured.	Action 1 Achieving the culture change necessary through the promotion of ethical behaviour and a value system on Climate Change and environmental issues is a long-term process which would benefit if multi-party political support is secured.

Recommendation		Action
Recommendation 86	Section 04.7	Action 2
The Government establishes the infrastructure and implements a sustained and continuous public awareness campaign drawing on the lessons gained in the process leading to the implementation of the Euro.		The Ministry for Resources and Rural Affairs together with appropriate civil society stakeholders establishes the infrastructure and implement a sustained and continuous public awareness campaign drawing on the lessons gained in the process leading to the implementation of the Euro.
Recommendation 87	Section 04.7	Action 7
A National Policy on Environment Education is designed by 2010 and introduced in 2011 as an integral part of the National Curriculum.		A National Policy on Environment Education is designed by 2010 and introduced in 2011 as an integral part of the National Curriculum.