ENERGY SAVING AND EFFICIENCY STRATEGY FOR SPAIN 2004-2012

E4

ACTION PLAN

2008 - 2012

EXECUTIVE SUMMARY

17th July 2007

MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO

IDAE Instituto para la Diversificación y Ahorro de la Energía

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EXECUTIVE SUMMARY

The Ministry of Industry, Tourism and Commerce has drafted a new Action Plan for the 2008-2012 period, within the Spanish Energy Saving and Energy Efficiency Strategy 2004-2012, to be approved in Cabinet Meeting in a monographic session on climate change.

Energy saving and efficiency policies are shaping up as a progress instrument of Society as: they contribute to social welfare; represent an element of social responsibility; they project human activities towards sustainable development; they establish a new framework for the development of entrepreneurial competitiveness; and summing up, they respond to the principle of solidarity between citizens and peoples[1].

These ruling principles must be translated into planning as the one introduced here, whose direction is to achieve the following strategic objectives:

1. *Acknowledge an instrument of economic growth and social welfare in energy saving and efficiency.*

2. *Establish the appropriate conditions for energy saving and efficiency to expand and develop in Society.*

3. *Strengthen energy saving and efficiency in all national Strategies, and specifically, in the Spanish Strategy for Climate Change.*

4. *Encourage competition on the market under the ruling principle of energy saving and efficiency.*

5. *Consolidate Spain's position in the avant-garde of energy saving and efficiency.*

[1] On this point reference to a newly-coined term for policies of this kind, such as "**gobernanza**", which according to the Dictionary of the Spanish Royal Academy of Language is: "The art of governing whose aim is the achievement of long-lasting economic, social and institutional development, promoting a healthy balance between the State, civil society and the market economy"

The Plan establishes a primary energy saving of 24,776 ktoe in 2012 as a quantified energy objective in opposition to the scenario which was used as the base for the initial Plan 2004-2012, involving 13.7%. Unlike the scenario considered as the base for Directive 2006/32/EC, energy end-use efficiency and energy services, the saving achieved would be in 2012 of 11%, exceeding then the objective established by the said Directive of 9% in 2016. On the other hand, and as a direct result of the Plan and in coherence with the EECCEL[1], it is deemed that an emissions reduction volume of 270,592 ktCO_2 will be achieved in the 2004-2012 period, out of which 238,130 ktCO_2 will in the period of the 2008/2012 plan.

This document, which defines the E4 2008-2012 Action Plan, will be developed with the following content:

[1] Spanish Strategy for Climate Change and Clean Energy

1. - Framework of reference

The Spanish Energy Saving and Energy Efficiency (E4) 2004-2012, approved by the Government in 28.11.2003, *defined the prospective saving potentials and the measures to carry out on a scenario of the said Strategy with a view to improving the energy intensity of our economy and leading to a convergent change towards international engagements in the field of the environment. An Action Plan for the period 2005-2007 was devised, in force at present, with specific measures and instruments to activate its financing over the said period and the energy and environmental objectives to be achieved over that period, too.*

A new Action Plan for the period 2008-2012, an extension in time of the former, completes the horizon of the Strategy above, follows in the tracks and the experience of the three-year management of the former action plan, and focuses on the less visible sectors, called diffused sectors (namely transport and building) and which require new instruments oriented to a very atomised target public and with very diverse behaviour patterns. Thanks to that experience, a new additional effort has been added to the initial proposal as regards the E4, basically of an economic and regulatory kind, in response to the Spanish Strategy for Climate Change and Clean Energy which seeks Spain's compliance with the Kyoto Protocol (and where the E4 represents an active and essential instrument for it). That is why the new plan is called E4 Action Plan Plus (PAE4+), as it represents an additional challenge, especially in diffused sectors.

In parallel with the national Strategies, the EU has designed policies in that same direction. Therefore, Directive 2006/32/EC energy end-use efficiency and energy services, defines a framework for a common effort to achieve saving of 9% in the year 2016. The current PAE4+ will be integrated in the Energy Efficiency Action Plan at EC level, which contributes to giving response to Spain, not only to the achievement of this engagement but also to the most ambitious objective, included in the decisions by the European Council of 9.3.2007 to reach saving levels of 20% on the trends on the horizon of 2020.

2. - Methodology

The objectives of the current PAE4 2008-2012 have been established after a thorough analysis of all energy consumers, inclusive of the transformation sector, and adding measures and objectives, looking for the optimisation of both means and agents. This way, the evolution of the seven sectors in the last years until 2006 and the first terms in 2007 have been updated and described into detail so that they state the latest economic changes and the ones of the energy and environmental context. The aggregation method has proved to be appropriate, due to the complexity of the sectorial scenarios and the diversity of subsectors, even if it requires more detailed analyses.

Apart from the above method, a general analysis has been done on macro-economic scenarios with a view to identifying the general energy consumption paths in their complex, sensitive connections with economy, the environment and competitiveness, among others. Thus, the analysis has detected a budding tendency to improvement on two indicators: total consumption and energy intensity. Both have come down to very encouraging rates, something that has not take place since 1986, and subsequently a slight change can be noticed with regard to the strong growth in building, equipment and infrastructures recorded in the last decade, an improvement of the activity in the manufacture sector of equipment goods and an increase in exports; and all of it in a scenario with GDP growth rates over 3%.

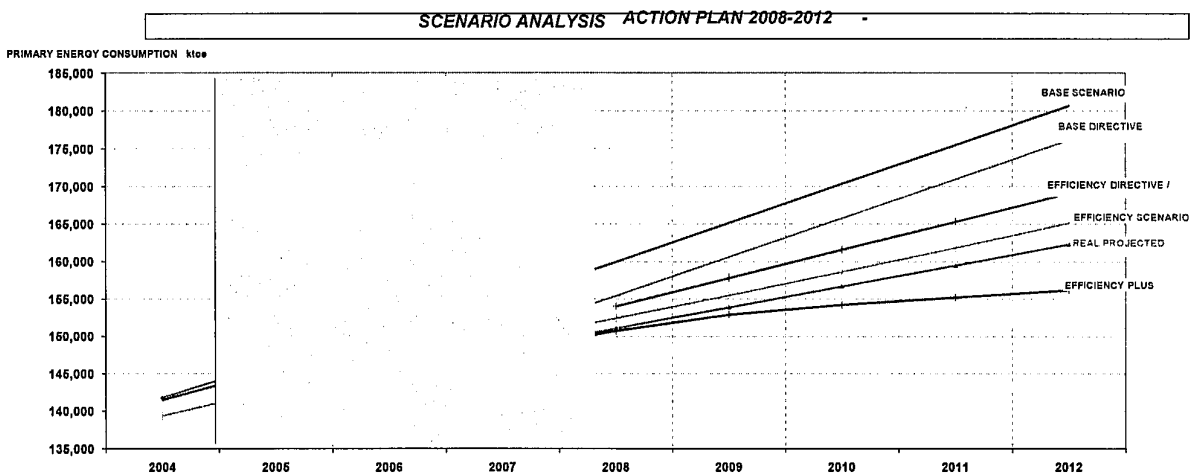
3. - PAE4 2005-2007 Results.

In this temporary framework, the results of this current PAE4 2005-2007 have been very positively valued, above all: the relevant advance in the management of public funds as all the Autonomous Communities have participated in a coordinated manner with the IDAE with their economic and technical means, reinforcing IDAE's performance, and with which a co-management technical framework has been established. This has led to a sounder knowledge on energy saving and efficiency; the number of activated measures has been increasing and the challenges have grown more global. In 2005 8 measures were implemented, 22 in 2006 and 24 in 2007: the public economic resources in play have involved a very significant quantitative change as they have amounted to M€540.5 during the period 2005-2007. This has enabled to reach the market in its large sense as it is estimated that 1,300,000 actions will be carried out during the said period (1,250,000 under the renewal plan for electric appliances and over 35,000 in the transport sector). As regards energy, still waiting for the 2007 actions to conclude, a primary energy saving of 3,500 ktoe a year are expected to be reached directly with the measures implemented, apart from the disseminating effect that such an amount of saving may involve during the said period. It must be stated that the accumulated saving effect during the period 2005-2007 may reach 15,000 ktoe (once the 2005 and 2006 consumptions have been confirmed and with provisional data for 2007), which entails 125% of the established figure in the E4. Moreover, the implementation of the legislative measures of a strong structural kind between 2005-2007, such as the Technical Building Code or the Energy Certification of Buildings allow concluding that the Plan's experience is basic to achieving the objectives fixed in this new planning.

4. - PAE4+ 2008-2012 Objectives

The macro-economic scenario defined in the E4 stated average GDP growth rates in real terms during the period 2006-2012 of 3.0%, and proposed trend growth rates or a base scenario for energy consumption of 3.1% and 3.4% in terms of primary and final energy, respectively, that is, with a moderate loss differential ratio in energy intensity. With the measures proposed on the E4, a more efficient scenario was suggested where the said measures evolve with rates for the 2006-2012 period of 2.3%; therefore, the improvement rate in terms of energy intensity would amount to 0.8%.

The new scenario proposed by the ***PAE4+ 2008-2012*** *will allow reaching saving in terms of additional primary energy in the year 2012 nearing 24,776 ktoe, which represents 13.7% of the consumption of the E4 base scenario this year. The E4 effort will therefore manage to soften the growth rate of the primary energy consumption up to 1.07%, which would involve an improvement of the energy intensity with ratios of 1.93%, and keeping the GDP growth rate at 3%. Both specific energy indicator paths are absolutely important to significantly improve all the key elements in energy supply: dependence, competitiveness and the environment. This group of analysed scenarios is defined in the following chart, which states: the E4 Base, the Directive Base, Management PAE4, E4 PAE4, the real projected scenario and the proposed one for the PAE4+. It is evident that each of them shows a different slope and a different annual rate. A punctual inflection is noticed in 2005/2006 with a clear follow-up of the trend stated by the E4 efficiency scenario. The areas between scenarios show the accumulated saving whose effect is cumulative: today's saving accounts for the future.*



Next chart summarises the various scenarios used to analyse, from the macro-economic point of view, the real capacities of the energy system to face such an important effort. Therefore, the references are the base scenario and the efficiency scenario, to which all others relate. In the case of PAE4+, the proposed improvements with respect to the base one are annual rates of 2.03%, and of 1.07% with respect to the efficiency one.

Average rates of the analysed scenarios, in primary energy.

SCENARIO	PERIOD	Average rates of growth consumption	Average differential rate	
Base	2004-2012	3.10	0	0.96
Efficiency	2004-2012	2.14	-0.96	0
Real/Projected	2002-2006/2012	2.06	-1.04	-0.08
Directive	2004-2012	2.59	-0.51	+0.45
Network planning	2005-2011	1.70	-1.40	-0.44
PAE4+	**2008-2012**	**1.07**	**-2.03**	**-1.07**

The energy and environmental sectorial objectives of the PAE4+ for the period are stated in the following chart. It states that the accumulated primary energy saving amount to 87,993 ktoe and come from three sources: the ones induced by the PAE4 2005-2007 which contribute 40.8% to the total with their effect; the ones proposed as a result of the current PAE4+2008-2012 and which involve the remaining 59.2%; out of it, 47.8% is due to proposed actions in the E4 for the period and 11.4% is achieved with an additional effort (+) in measures and their application.

Sectorial objectives in the period 2008-2012, in PAE4+ emission saving and reduction

SECTORIAL APPLICATION		ENERGY SAVING (2008-2012) ktoe		AVOIDED EMISSIONS (2008-2012) (ktCO2)
		FINAL	PRIMARY	
END-USE SECTORS	INDUSTRY	17,364	24,750	59.165
	TRANSPORT	30,332	33,471	107.479
	BUILDINGS	7,936	15,283	35.540
	HOME AND OFFICE AUTOMATION EQUIPMENT	1,729	4,350	9.288
	AGRICULTURE	1,402	1,634	5.112
	PUBLIC SECTOR	691	1,739	3.712
TRANSFORMATION SECTOR	ENERGY TRANSFORMATION		6,707	17.834
TOTALS		59.454	87,934	238,130

In relative terms, the sectorial effort is visualised more in depth as Public Services and Transport and Building sectors, as it can be seen on the following table, must do a greater effort than the average, which anyway involves a really important effort. Thus, with regards to the Directive that establishes an equivalent saving of 1% per year, the PAE4+ effort involves doubling the objective.

Sectorial savings and avoided emissions in 2012, with respect to the base scenario.

SECTORIAL APPLICATION		ENERGY SAVING 2012/Base Scenario (ktoe)		AVOIDED EMISSIONS 2012 (ktCO2)	ENERGY SAVING 2012/SCENARIO Base %		AVOIDED EMISSIONS 2012 %
		FINAL	PRIMARY		FINAL	PRIMARY	
END-USE SECTORS	INDUSTRY	4,355	6,207	14,839	8.9%	8.9%	8.9%
	TRANSPORT	9,088	10,028	32,203	17.2%	17.2%	17.2%
	BUILDINGS	2,390	4,603	10,703	10.1%	13,0%	13.1%
	HOME AND OFFICE AUTOMATION EQUIPMENT	497	1,250	2,670	11.9%	11.8%	11.7%
	AGRICULTURE	375	437	1,367	7.6%	7.9%	7,7%
	PUBLIC SERVICES	178	448	956	22.0%	22.0%	22.0%
TRANSFORMATION SECTOR	ENERGY TRANSFORMATION		1,802	4,792		5.3%	5.3%
TOTALS		16,883	24,776	67,530	12.4%	13.7%	12.9%

In terms of CO_2 reduction emissions, it involves exceeding the initial proposal for which the E4 established a reduction of 190 $MtCO_2$. It is envisaged to reach a reduction emission volume of 270,592 $ktCO_2$, out of which: 238,130 $ktCO_2$ corresponds to reductions during the period 2008-2012 as a result of the PAE4+; and 32,462 $ktCO_2$ of the effect derived from the first 2005-2007 Plan in the period. This emission saving would involve 12% of the emissions that would be achieved in the period, considering that Spain would reach 37% of the emissions in 1990. All things considered, the objectives proposed in the E4, in accordance with the summary chart that follows, will manage to achieve in terms of energy, 142.9% at the end of the period, which represent a reduction of 7.0% with respect to the consumption base scenario in the 8 years of enforcement of the E4. As regards the CO2 emissions reduction, the total achieved objective with the two plans with regard to the E4 has amounted to 142.4 %.

Balance of energy results and of emissions reduction in the E4

E4 2004-2012	
AEP 69,950 ktoe →	EE 190,000 $ktCO_2$

PAE4 2005-2007	PAE4 2008-2012
12,006 ktoe 32,462 $ktCO_2$	87,933ktoe 238,130 $ktCO_2$

PAE4 2005-2007 + PAE4 + 2008-2012	
AEP 99,939 ktoe →	EE 270,592 $ktCO_2$

*The direct **economic benefits** derived from the achieved saving in the Plan period, valued at market prices (480 €/toe and 18 €/tCO2), are stated in the following chart. Their reference value relates to the investments to be made and which amount to 22,184 M€; that is, an average profitability factor of 2.1 is produced, and therefore must be defined as a group of extraordinarily profitable investments.*

Benefits derived from energy saving and avoided emissions

SECTORIAL APPLICATION		ECONOMIC BENEFITS 2008-2012 (k€)	
		ENERGY	CO_2 AVOIDED
END-USE SECTORS	INDUSTRY	11,879,768	1,064,962
	TRANSPORT	16,065,941	1,934,620
	BUILDINGS	7,335,722	639,726
	HOME & OFFICE AUTOM. EQUIPMENT	2,088,047	167,179
	AGRICULTURE	784,397	92,021
	PUBLIC SERVICES	834,494	66,814
TRANSFORMATION SECTOR	ENERGY TRANSFORMATION	3,219,360	321,010
	COMMUNICATION	-	-
TOTALS		42,207,730	4,286,332

*The PAE4+ consists in a framework of specific **measures** that specifically reach the seven disaggregated sectors: Industry, Transport and Various Uses subdivided into: Building, Home and Office Automation Equipment, Agriculture and Fishing, and Public Services, paying attention, to the Energy Transformation Sector, too (Refining, Electricity Production, which includes transport and distribution). In order to activate the change needed by sectors and subsectors alike, both specific and general measures linked to the*

strategic axes are to be designed (e.g. the AEE measures plan in buildings of the Administration) and which should focus on the energy objective.

Thus, 59 actions have been identified, out of which: 36 run thanks to economic incentives; 3 relate to the promotion of initiatives where a general communication plan is considered as an action; and 4 measures meant to the training of market users and agents. Moreover, 16 actions of a regulatory kind will be developed within some measures, which project their temporal scope beyond the Plan. This measure framework is quantified in economic terms, both public and private, with an identification of the agents taking part in it. Thus, the Plan is set within a larger strategic framework, whose design is shaped and established with the measures to carry out in 2008-2012.

Table 6.1. Summary of measures and actions by typology and sectors

SECTORS	Investment Aids	Promotion	Training	Total Measures	Regulatory Actions
Agriculture and Fishing	5	2		7	1
Building	5			5	
Home and Office Automation Equipment	2			2	
Industry	2	1		3	1
Public Services	3		1	4	1
Transport	12		3	15	12
Energy Transformation	7			7	1
TOTALS	**36**	**3**	**4**	**43**	**16**

The above chart states the complete listing of measures by sectors, standing out the energy objectives, the avoided emissions, the agreements to execute and the public aids proposed.

5. - PAE4+ 2008-2012 Objectives and Directive 2006/32/EC

Directive 2006/32/EC, on energy end-use efffciency and energy services, states that the Member States shall take reasonable, practicable and profitable measures with a view to achieving energy saving of 9% for the year 2016, with respect to the trend scenario which would result from considering the final energy consumption of the last five years. In this sense, the objectives established in the 2008-2012 Plan exceed the objective established in the Directive, achieving a saving of 11% in the very year 2012 with respect to the trend scenario set up by the Directive.

6. - Economic appraisal

In economic terms, the Plan requires a very large volume of resources, so much so that the incentive should have the effective outcome of boosting private investments which in most of the cases, happen to be profitable in terms of money, but which need the decision to apply always limited resources. Next chart shows both the public and private efforts to carry out the Plan, and which amount to M€2,366.5, equivalent to a support intensity of 10.7%, and necessary to activate the proposed investment plan of M€22,185.0. Moreover, the additional effort proposed by the PAE4+ stands out as it has meant increasing funds by M€478.8, the equivalent to 20.2% of the budget.

PAE4+ Sectorial Financing

SECTORIAL APPLICATION		TOTAL INVESTMENTS (k€)	TOTAL PUBLIC FUNDS (k€)	ADDITIONAL PUBLIC FUNDS (k€)	Incentives Intensities (%)	Additional Incentives/ Total Incentives (%)
END-USE SECTORS	INDUSTRY	1,671,000	370,000	0	22.1	0.0
	TRANSPORT	1,892,718	408,291	117,937	21.6	28.9
	BUILDINGS	13,469,477	803,671	287,266	6.0	35.7
	HOME & OFFICE AUTOM. EQUIPMENT	1,992,235	532,500	-	26.7	0.0
	AGRICULTURE	683,207	93,754	24,000	13.7	25.6
	PUBLIC SERVICES	1,351,000	89,000	28,000	6.6	31.5
TRANSFORMATION SECTOR	ENERGY TRANSFORMATION	1,085,330	29,284	21,652	2.7	73.9
COMMUNICATION		40,000	40,000	0	100,0	0.0
TOTALS		22,184,967	2,366,500	478,855	10.7%	20.2%

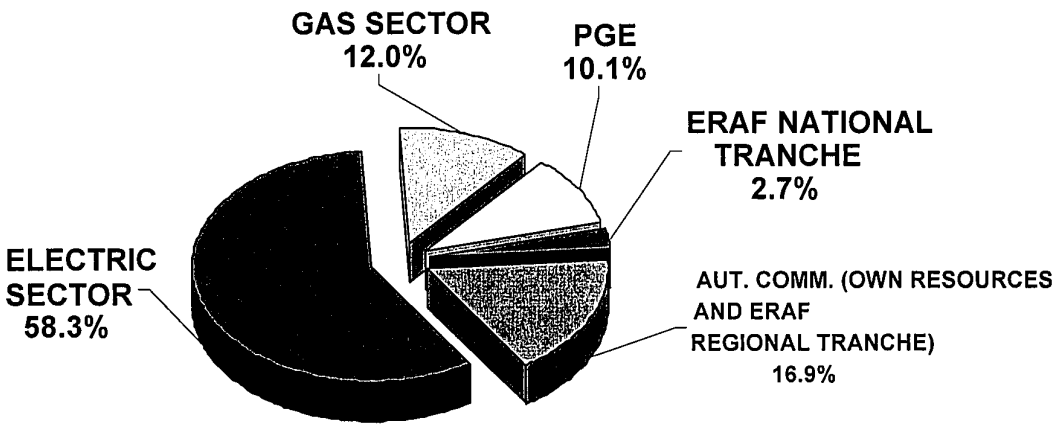
As regards the provenance of the public resources necessary to activate the Plan, the chart states three of them: the resources that the Spanish Administration has at the disposal of the Plan, both from the IDAE and the Autonomous Communities; the one coming from the ERDF structural funds; and the re-invested ones from the electricity and gas sectors with a view to promoting the improvement of the said sectors efficiency.

Origin and application of public funds

ORIGIN OF PUBLIC FUNDS FOR THE 2008-2012 PLAN			
		RESOURCES PERIOD 2008-2012 (k€)	ANNUAL AVERAGE RESOURCES (k€)
PUBLIC FUNDS COMING FROM	PGE-IDAE	175,000	35,000
	PGE-OOMM	50,000	10,000
	ERDF PER-NATIONAL TRANCHE	64,000	12,800
	RETURNS SG ERDF-IDAE	13,000	2,600
	AUT. COMM. (OWN+ERDF PER TRANCHE)	400,000	80,000
SECTORIAL REINVESTMENT	GAS TARIFF	285,000	57,000
	ELECTRICITY TARIFF	1,379,500	275,900
TOTALS		2,366,500	473,300

PUBLIC RESOURCES AND THEIR APPLICATION			
		PUBLIC RESOURCES PERIOD 2008-2012 (k€)	ANNUAL AVERAGE RESOURCES (k€)
END-USE SECTORS	INDUSTRY	370,000	74,000
	TRANSPORT	408,291	81,658
	BUILDINGS	803,671	160,734
	HOME & OFFICE AUT. EQUIPMENT	532,500	106,500
	AGRICULTURE	93,754	18,751
	PUBLIC SERVICES	89,000	17,800
TRANSFORMATION SECTOR	ENERGY TRANSFORMATION	29,284	5,857
	COMMUNICATION	40,000	8,000
TOTALS		2,366,500	473,300

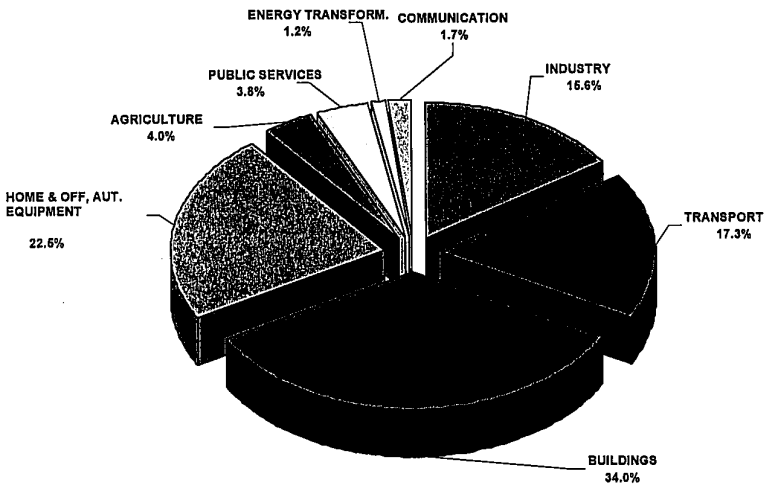
Percentage distribution of the public funds origin



In relation to the ***sectorial*** *allocation, the following chart expresses the application percentage of these public aids. The most outstanding ones are those that receive more resources in absolute terms, precisely the sectors requiring stronger support focus and intensity due to their extension and difficult access to measures and efficiency: buildings,*

equipment and transport; that is, the so-called diffused sectors not affected by the emissions Directive and the Allocation National Plan II (PNAII).

Percentage distribution of the sectorial application of public resources

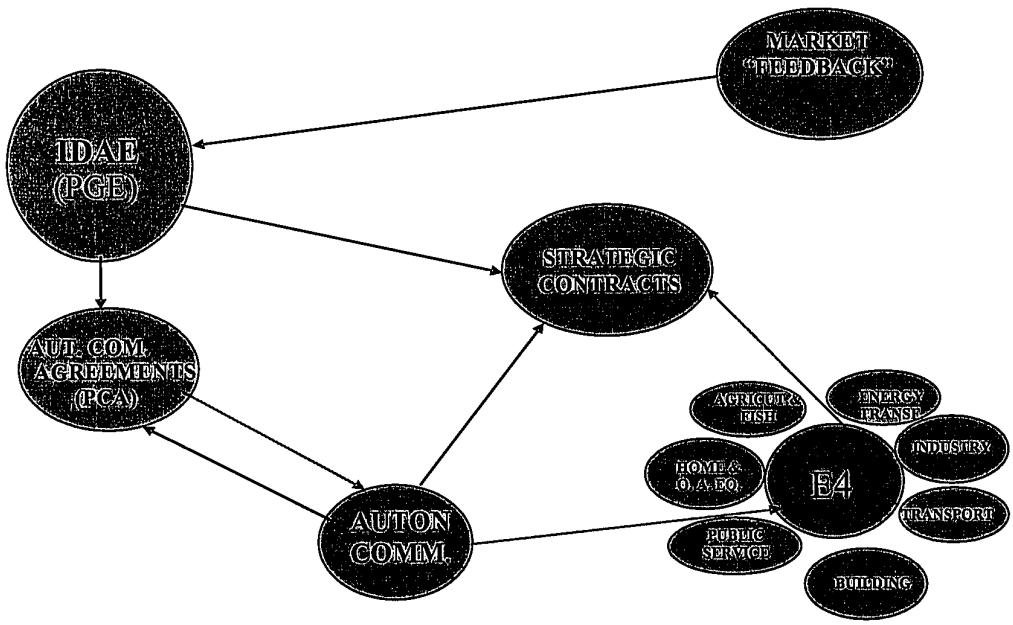


The direct benefits the PAE4+ is going to generate will lead to a first energy saving level and in a reduction of emissions. In the first case, and since we are facing an energy price scenario and particularly, of very high oil products, it is estimated that saving is translated into very important economic benefits which will achieve a return on the carried out investments with different profitability levels, according to sectors and measures. Moreover, the emission right market establishes some economic average levels for the reduction of emissions. Considering a value of 480€/toe, (the equivalent of $65/barrel and €18/t$CO_2$) the whole of it allows reaching some returns for both concepts of M€42,207.8 and M€4,286, respectively, clearly paying off the investments proposed for the period, as they generate returns worth 2.09 times and a multiplying effect over the aids of 19.6 times (just with the value of the avoided emissions, public funds are written off). All of it points to the high profitability of the Plan in terms of aids invested by the State and other sectors, as well as the strong impact in terms of trade balance. Other benefits, among which the ones derived from other environmental impacts, sustainability, employment or competitiveness, are analysed in the document.

The efficient management of public resources is a key element to achieve the proposed saving levels, and that is why this second Plan is going to state the benefits derived from

the learning and implementation of collaboration systems between the Administrations, in the co-management and co-responsibility of the Plan's execution between the State's General Administration and the Autonomous Communities, an example of force focalisation and of resource optimisation; and additionally, for the participation of new agents (sellers, professionals, audits, service firms, installers, etc.) who are getting closer to this "new concept" of efficiency, for its profitability and capacity to create new businesses. The proposed scheme is summarised in the following chart:

Diagram of Participation and Co-Financing within the framework of Autonomous Communities



*As regards the **follow-up** of the Plan and within the collaboration framework above, a series of indicators of sectorial monitoring and measures are proposed in such a way that the changes that the PAE4+ brings about directly can be identified in as much detail as possible, as well as other effects, much more difficult to quantify, as the induced ones and particularly, behaviour changes.*

7. - Best technology available

Innovation and technological development are key elements for their strategic features, and the effectiveness of the measures will somehow depend on the direction and speed of access of the new equipment to the market. This will lead to an increase in knowledge, in competitiveness in industrial firms and of the services they provide, the ripening and delimitation of a new sector specialised in efficiency. Therefore, a series of actions are proposed to speed up the access to higher levels of activity in R+D in firms so that the process is speeded up, too.

Last, a design on communication actions that directly affect the spreading effects of the Best Technologies Available is presented, as well as an awareness attitude by means of training and the increase of the responsiveness in saving and efficiency aspects, rendering visible phenomena such as the GHG impacts or the exhaustion of fossil resources and the need to relate them to sustainability elements and to the sphere the whole of the actions developed herein belong to.

Summary Chart of Measures

Table 6.2. GENERAL CHART OF MEASURES OF THE 2008-2012 ACTION PLAN

		MEASURE	Application of Public Funds	Direct Saving (ktep)	Direct Avoided Measures ($ktCO_2$)	Public Aids (k€)	Investments (k€)
				Total	Total	Total	Total
AGRICULTURE & FISHING	1	Communication campaign / promotion of techniques of energy efficiency use in agriculture	Execution of the campaign	0	0	3.127	3.127
	2	Addition of energy efficiency criteria within the Modernisation Plan of the agricultural tractor fleet *Energy labelling of tractors - under execution*	RENOVE (Aids to investment)	93	286	53.775	215.280
	3	Boost to the migration of spray irrigation systems to localised irrigation systems	Technical support and dissemination	67	401	954	190.800
	4	Improvement of energy saving and efficiency in the fishing sector (Modification of engines, propellers, and alternative fuels / Peixe Verde Project)	Pilot experience and its establishment on ships	116	337	23.522	235.221
	5	Action Plan of Energy Improvements in Irrigation Union Groups: Energy Audit Protocol	Execution of audits and improvement plan	146	673	2.122	10.608
	6	Improvement of energy efficiency in tractors in use by means of the Technical Inspection of Vehicles (Engine Energy Inspection)	Vehicle Technical Inspection Supplement and filter change	886	2.720	7.662	22.987
	7	Migration to Conservation Agriculture (Direct sewing and vegetable roofing)	Renewal of agricultural machinery (aids to investment)	74	227	2.592	5.185
			TOTAL AGRICULTURE	1.402	4.663	93.754	683.207
INDUSTRY	1	Voluntary Agreements (Engagement of Entrepreneurial Associations to reach the detected energy saving / Encourage the industry to adopt saving measures)	—			0	0
	2	Energy Audits (To detect the potential and the decision-making of energy saving investments / To determine the benchmarking of processes)	Subvention of 75% of the Energy Audit cost			2.850	3.800
	3	Programme of Public Aids (To ease economic feasibility of the energy saving investments to reach the detected potential)	Direct capital subvention or interest rebate in loan or leasing contracts. Maximum amount: 22% or the eligible cost.	7.904	24.029	367.434	1.667.319
	4	*Legislative action: Inclusion of a specific assessment of energy impacts in all the industry projects*					
			TOTAL INDUSTRY	7.904	24.029	370.284	1.671.119
PUBLIC SERVICES	1	Public lighting installations *Legislative action: Energy Efficiency Regulations in outdoor lighting installations*	Change of equipment and bulbs (aids to investment)	462	2.039	56.718	866.974
	2	Energy Efficiency studies and audits of installations in Town/City Halls and Public Firms.	Audit implementation			600	600
	3	Courses on Energy Training for municipal technicians.	Training Courses implementation			240	0
	4	Energy Efficiency improvement in supply and water treatment installations.	Change of equipment (investment aid)	230	1.014	31.658	483.915
			TOTAL SERVICES	691	3.053	89.216	1.350.889
HOME EQUIP. - OFFICE EQ.	1	Electric Appliances Renewal Plan. *Plan Renove:* encouraging the replacement of electric appliances with a low energy labelling for others with Class A or higher energy labelling.	Subvention	1.509	6.106	532.500	1.992.235
	2	Equipment and Efficient Use of Energy Plan in the Public Administration. Promotion of Saving Plans in Public Administrations to achieve the objectives set in Directive 2006/32/EC.	—	220	1.182	0	0
			TOTAL EQUIPMENT	1.729	9.288	532.500	1.992.235
BUILDING	1	Rehabilitation of the thermal envelope in existing buildings: Promotion of actions on building thermal envelope so as to reduce the heating and cooling energy demand.	Subvention or loan interest rebates	450	5.232	175.150	2.677.295
	2	Improvement of energy efficiency in the thermal installations of the existing buildings. The replacement of production equipment for heating and cooling of fluid movements and the inclusion of free cooling systems and thermal recovery in the existing air-conditioning installations.	Subvention or loan interest rebates	1.683	6.452	243.315	3.719.205
	3	Improvement of energy efficiency in the indoor lighting installations in existing buildings	Subvention or loan interest rebates	3.339	17.937	176.292	2.694.681
	4	Promote the construction of new buildings and the rehabilitation of the existing ones to achieve high energy rating by means of a economic Support Line to those buildings that achieve an A and/or B energy rating.	Subvention or loan interest rebates	1.313	5.322	208.914	3.969.362
	5	*Revision of the energy demands in the building regulations*		148	598	0	408.934
			TOTAL BUILDINGS	7.936	35.540	803.671	13.469.477
ENERGY TRANSFORMATION	1	Mixed Commissions in Petrol Refining: Follow-up of the energy consumption evolution and proposals in the E4 regarding Petrol Refining.	Execution of possible technical studies and/or publications.	2.240	6.726	90	82.585
	2	Mixed Commissions in Electricity Generation: Follow-up of the energy consumption evolution and proposed measures in the E4 regarding Electricity Generation.	Execution of possible technical studies and/or publications.	2.985	6.971	90	315.251
	3	Potential Co-generation Development. Feasibility studies. Implementation of studies to determine the technical, economic and administrative feasibility of new co-generations.	Subvention to carry out feasibility studies.	[illegible]	[illegible]	2.250	3.000
	4	Potential Co-generation Development. New installations in non-industrial activities: Promotion of the establishment of new High Efficiency Co-generation Plants, with an electric capacity > 150 kW	Subvention to carry out projects.	343	802	11.431	228.621
	5	Potential Co-generation Development. Promotion of low-capacity cogeneration plants: Execution of demonstration projects and implementation of installations with a capacity ≤ 150 kWe. *Legislative action: Regulatory development in the field of co-generation connection to the low-voltage grid.*	Demonstration projects financing	[illegible]	[illegible]	1.979	7.924
	6	Improvement of energy efficiency in co-generation. Energy audits: Replacement of the existing co-generations to get adapted to the production process and the technical improvements available to increase energy efficiency.	Subvention to carry out energy audits.	[illegible]	[illegible]	3.240	4.320
	7	Improvement of energy efficiency in co-generation. Renewal Plan *(Plan Renove)* of the existing installations: Replacement of the existing co-generations to get adapted to the production process and to the technical improvements available to increase energy efficiency.	Subvention for co-generation renewal projects.	1.136	3.332	10.203	443.628
			TOTAL ENERGY TRANSFORMATION	6.707	17.832	29.284	1.085.330
TRANSPORT	1	Urban Mobility Plans *Legislative action: Development of the basic legislation on urban and employees' mobility* *Legislative action: Municipal bylaw models on mobility and taxation of private cars with energy efficiency features*	Aids to: Finance mobility plans, system installation; studies and pilot experiences.	4.814	13.208	231.938	1.559.100
	2	Company Transport Plans *Legislative action: Development of the basic legislation on urban and employees' mobility* *Legislative action: Municipal bylaw models on mobility and taxation of private cars with energy efficiency features*	Aids to: Finance studies on company transport plans; pilot projects.	1.604	4.403	34.948	192.213
	3	Greater Participation of Collective Road Transport Means *Legislative action: System of allowance allocation to urban public transport according to the establishment of efficiency criteria.*	Aids for intermodality infrastructure studies and basic designs, reserved lanes, computer tools, etc...	963	2.641	25.364	25.365
	4	Greater Participation of the Railways	Aids for infrastructure studies and basic designs that may increase the sector's penetration in goods transport. Training courses, communication actions, documentation development.	3.850	10.567	13.967	13.968
	5	Greater Participation of Maritime Transport Means	Aids for infrastructure studies and basic designs that may increase the sector's penetration in goods transport. Training courses, communication actions, documentation development.	642	1.762	14.185	14.185
	6	Transport Infrastructure Management *Legislative action: Study to establish a general payment system to use transport infrastructures.*	Aids for comprehensive studies on transport interchanger networks, logistic centres and infrastructure basic designs that may increase the intermodality towards more efficient means. Pilot project financing.	8.022	22.013	6.842	6.842
	7	Road Transport Fleet Management *Legislative action: Minimum criteria system for the road transport fleet management to award licences to firms.*	Aids to carry out fleet management audits, support lines to finance pilot projects and efficient driving courses for air transport fleet.	1.604	4.403	19.701	19.701
	8	Aircraft Fleet Management	Aids to carry out fleet management audits, support lines to finance pilot projects and efficient management courses for air transport fleet. Pilot projects financing and replacement of engines for more efficient ones.	320	880	1.371	1.370
	9	Efficient Driving of Private Cars *Legislative action: Introduction of efficiency driving techniques in the assessment to obtain a private car driving licence.*	Aids for teaching efficient driving courses to drivers and driving school teachers.	1.926	5.283	8.285	8.283
	10	Efficient Driving of Buses and Lorries	Aids for teaching efficient driving courses to drivers and driving school teachers.	1.926	5.283	5.381	5.381
	11	Efficient Driving in the Air Sector	Aids to carry out training courses for pilots in energy efficiency techniques. Documentation development and communication conferences. Demonstration pilot projects in the sector.	320	880	5.098	5.098
	12	Renewal of the Road Transport Fleet *Legislative action: Establishment of the minimum quality criteria for fleets in order to award licences to passenger collective transport firms or to firms for the transport of goods by road.* *Legislative action: Development of a labelling system for heavy duty industrial vehicles.*	Aids to lower the extracost in alternative vehicles in relation to equivalent vehicles of a traditional design and motoring.	1.604	4.403	5.781	5.782
	13	Renewal of the Aircraft Fleet	Aids to carry out studies and demonstration pilot projects that include all the energy efficiency criteria for the choice of aircraft.	320	880	1.393	1.393
	14	Renewal of the Maritime Fleet	Aids to carry out studies and demonstration pilot projects that include all the energy efficiency criteria for the choice of the maritime fleet.	320	880	2.597	2.597
	15	Renewal of the Private Car Fleet *Legislative action: Development of basic legislation on urban and employees' mobility*	Aids to lower the extracost in alternative vehicles in relation to equivalent vehicles of a traditional design and motoring.	3.850	10.567	31.441	31.441
			TOTAL TRANSPORT	32.085	88.053	408.292	1.892.719
	1	General communication actions to all sectors	Dissemination plans / General publications / Participation in events.			40.000	40.000
			TOTAL COMMUNICATION			40.000	40.000