



APRAISE - Stakeholder Consultation Workshop

**“Improving Environmental Policy Making in the EU: from
Member State Experience to EU Policy Design”**

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Background Paper

Energy Efficient Buildings

The cases of Greece and the Netherlands

Introduction

This background document presents the assessment of environmental and sustainability-related policies in different policy fields: waste management, water management, resource efficiency and climate protection. These policy fields are reflected in four case studies

- Waste management with focus on plastic packaging waste
- Promotion of energy efficient buildings
- Use of biomass for the production of bio-fuel
- Hydro-power as an example of renewable energy sources

Starting point of each of these case studies is one (or a set of related) directive(s) enacted by the European Commission, which have to be transposed subsequently into national law. In most cases, the directives describe the environmental targets that are to be achieved, but do not prescribe exactly how the targets should be achieved. This leaves the countries plenty of room with regard to the choice of policy instruments and their respective designs. But not only the type and design of policy instruments is decisive for the effectiveness of the transposed policies; also many other factors can influence the policy output in favourable or unfavourable ways. These factors – specifically assessed in the APRAISE project – can result from

- The broader **context** including environmental, economic, social, and technological factors;
- Institutional settings that prevent the transposition and **implementation** of EU directives as well as policy specific context such as policy instrument design, operation and enforcement; and
- **Interactions** between policies and policy instruments, where one policy instrument can possibly reduce the effectiveness of another instrument or joint implementation of policy instruments could result in synergies.

Altogether, the specific policy instruments, their design, their interaction with one another and with other policy instruments, the context in which they work and the way they are implemented give rise to their specific output. For the assessment in APRAISE, this output is measured against the environmental targets stated in the policies – mainly in the directives, but also in the national laws – and the degree, to which the targets are achieved, is called the policy instrument's **effectiveness**. However, actual effectiveness sometimes differs from how a policy instrument could perform in theory. Therefore, not only the actual effectiveness of the assessed policy instruments is measured, but also the (maximum) level of achievement that could potentially be achieved. In many cases, this is also what the policy makers expected, when they planned and implemented the policy. In APRAISE, this potential achievement is called **efficacy**. Eventually, in order to assess the usefulness of policy instruments in achieving a certain target, their effectiveness (and efficacy) has to be related to the cost of implementing and pursuing these targets. This is determined by the **efficiency** of the policy instruments.

Eventually, measuring the effectiveness, efficacy and efficiency of a policy instrument and relating these results to the policy instrument's characteristics, their working context, specific implementation process and interaction with other policy instruments allows drawing conclusions as to why, possibly, a policy instrument does not perform as it was expected to and how the performance could be improved.

Energy Efficient Buildings – the cases of Greece and the Netherlands

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The improvement of energy efficiency is an EU priority under the Climate and Energy 20-20-20 package and one of the greatest energy saving potential lies in buildings. Towards to this direction, a number of policies have been raised, including subsidies and soft loans for energy efficiency interventions in buildings, the Regulation of the Energy Performance of Buildings etc. Occasionally, these policies include the replacement of inefficient equipment, the use of materials and other activities, which could potentially harm the environment in the sense of unsustainable exploitation of resources and improper management of waste streams deriving from the building sector. Under this scope, the objective of this case study is to assess national policy instruments, in terms of performance and to investigate possible overlaps or mutual reinforcements among policies and regulations impacting the building sector and policies referring to the treatment of wastes deriving from EE interventions.

| Crucial domestic policy instruments | |
|---|---|
| Greece | The Netherlands |
| <ul style="list-style-type: none"> • ENERGY EFFICIENCY programme: financial incentives (70% subsidy scheme) to Municipalities to adopt practices targeted at the enhancement of energy efficiency interventions. • Energy Saving in households programme: aims at improving the energy performance of residential buildings through the provision of soft loans and subsidies; • Changing Air-Condition programme: promoted the replacement of old air cooling units with new more efficient ones by financing the 25% of the retail price; • Regulation on the Energy Performance of Buildings (REPB): introduces an integrated energy design in the household and tertiary building sectors to improve the energy efficiency through specific actions; • Extended Producers Responsibility: the financial obligation of Producers and importers of products for managing their products, by the end of their lifecycle. | <ul style="list-style-type: none"> • Energy Performance Certificates: Mandatory for new and existing buildings in order to stimulate energy savings in the built environment including heating, cooling, ventilation, lighting and hot water; • Reduced VAT for insulation work: Financial incentive for installing insulation (ground, roof and facade) with a reduction of the VAT to 6% for such works; • Temporary subsidy for glass insulation: Financial incentive for stimulating the market of energy efficiency through glass insulation in existing homes built before 1995; • Strengthening of ecodesign and the energy labelling of appliances: mandatory labels to promote the design, production and purchase of energy efficient appliances; • Producer responsibility: Voluntary agreement between suppliers and municipalities for household waste and mandatory for batteries, EEEs, cars car tires and packaging; • Landfill tax: Tax on waste disposal aiming at increasing recycling rate and reduce landfills |

Crucial context factors impacting effectiveness/efficiency of policy instruments

| Greece | Netherlands |
|--|---|
| <ul style="list-style-type: none"> • Recession amplified the reluctance of financial institutions to (take risks) providing loans. Lack of liquidity hampered or even halted the participation of Local Authorities in the subsidy scheme. ■ • Decreasing construction activity implicitly urged energy efficiency retrofits in the existing building stock. ■ • Escalating energy costs encouraged residential end-users to adapt their energy behaviour and adopt energy end-use efficiency habits and interventions. ■ • Building arbitrariness (the questioned legality of buildings, eligible for participation in EE programmes, led to delays in projects' implementation). ■ | <ul style="list-style-type: none"> • Economic crisis affected housing sector reduced the willingness to invest in energy saving in the housing sector and the number of EPCs reduced. ■ • The environmental awareness is estimated to be quite high in the Netherlands, but this did not affect the EPC. • The increase of the oil price did indeed create a signal for a more energy saving behaviour to consumers. ■ • Constant political framework changes did not assist the creation of jobs due to the EPBD and many companies went bankrupt. ■ |
| Positive ■ ■ ■ ■ Negative | |

Crucial implementation factors impacting effectiveness/efficiency of policy instruments

| Greece | The Netherlands |
|---|--|
| <ul style="list-style-type: none"> • Sufficient price signals within a recessionary environment (unfavorable investment context). ■ • Enhanced administrative set up regulating and monitoring, EU co-financed, energy efficiency subsidy programmes. ■ • Lack of coordination and management among institutions/fragmentation of the institutional set up. ■ • Poor institutional capacity for the administration and monitoring of the Regulation on the Energy Performance on Buildings' implementation (i.e. lack of staff, expertise, resources). ■ • Fragmented public awareness campaigns regarding the benefits of energy efficiency retrofits in buildings as well as of the separate collection and disposal of electrical appliances. ■ | <ul style="list-style-type: none"> • The lack of sanctions for not implementing EPCs under the EPBD resulted in a poor compliance, as they were left to the flow of the investment climate, which at this period declined. ■ • The lack of accuracy of the prescribed methodology, a standard training for educating qualified and independent assessors and the high price of the label have delayed the implementation of the EPBD. Similarly, The lack of the clear monitoring requirements for submitting the VAT reduction led to inefficiencies. ■ • With the labeling system, manufacturers and producers were stimulated to design more energy efficient products and by purchasing a product, consumers consider the energy use of the products as well next to other factors due to the increased awareness. ■ • Municipalities have a long history with waste collection and recycling, whereas also producers were familiar with their responsibilities based on earlier voluntary agreements and waste management policies. ■ |
| Positive ■ ■ ■ ■ Negative | |

Crucial interaction factors impacting effectiveness/efficiency of policy instruments

| Greece | The Netherlands |
|---|---|
| <ul style="list-style-type: none"> • Discrepancies in the building code stipulating horizontal property rights in condominiums / requirement of 100% consensus of owners to approve a decision and make a financial contribution. ■ • Provisions for the treatment of waste streams in energy efficiency programmes can facilitates waste collection and treatment targets. ■ • Prioritization over specific technology clusters (i.e. more easily achievable measures) crowding out investments in more “traditional“ material (i.e. lime and stone) and in more innovative but more costly interventions (i.e. geothermal heat pumps) may cause interactions among market actors and impede the achievement of future energy efficiency objectives. ■ | <ul style="list-style-type: none"> • The EPCs in combination with VAT reduction, temporary insulation subsidy and energy labeling of appliances have enabled to carry out energy efficiency improvement in the built environment and increase awareness on energy saving; however, the total number of interventions was lower than anticipated due to implementation issues ■ • Producers’ responsibility in combination with the landfill tax and the prohibition of landfilling recyclable and combustible waste requires that construction and electronic waste have to be separated for recycling or incinerated for energy and heat production. ■ • The interaction between the energy efficiency policy mix can be assessed as slightly positive on the total effectiveness and efficiency of key policy instruments since VAT reduction and temporary subsidy for insulation work have successfully supported the system of EPCs. However, the implementation of EPCs is inconsistent and unreliable, therefore less effective than originally anticipated. ■ • The combination of disposal tax and producers’ responsibility enabled an agreement between producers/suppliers, compliance schemes and municipalities to use revenues raised from disposal tax to compensate waste collection, separation and recycling activities. ■ |

Positive ■ ■ ■ ■ Negative

Anticipated and observed effectiveness of domestic policy instruments (Greece/Netherlands)

Greece

- A total number of 39,952 of applications entered the “Energy Saving in households” programme, **fulfilling 80% of the target set** after the inclusion of a new lower-income eligibility category for funding.
- During its first round, 106 Municipalities entered the ENERGY EFFICIENCY programme.
- A large increase in the number of issued EPCs during the year 2012 (211.475) compared to the year 2011 (62.525) occurred with the obligatory issuance of an EPC for the leases of flats (January 2012).
- The Producers Responsibility **contributed extensively to the achievement of WEEE collection targets** through the establishment of the National Collective System. (i.e. average 81% of target achievement during 2006-2012).

The Netherlands

- Around 2 million Dutch dwellings possessed an energy label (mostly C and D) by the end of 2011 which was a quarter more than at the end of 2009. The trust in the energy label is rather low in the Netherlands; therefore the label is often not used by transactions (as it was expected to follow housing prices), despite having awareness of it.
- The actual effect of the VAT reduction was not significant and did not create additional effects than the autonomous trend. In contrast, the temporary subsidy has received 100.000 applications (around 800.000 m2 installed glass insulation), which also resulted to increase in short term employment perspectives in the glass industry
- The market share of appliances equipped with energy label A has significantly increased (currently 95% of appliances) as a success of the labeling system, which provides a legitimate platform for technology innovation in the industry of electronic appliances and useful information about energy efficiency to consumers.
- The total recycling of MSW was already on a high level in the Netherlands from 2001, but it still increased from 45 % to 51 % to 2010, already fulfilling to the 50 % recycling target. Furthermore, the collection target of the 2002/96/EC Directive (4 kg/inh/year) was already reached in 2010 as well as in 2008 and 2006
- The revenue from the tax was at its maximum in 2001 and was quite stable until 2008. Then it started drastically to decrease due to the reduction of the waste landfilled, but it still created a heavy administrative burden. The amount of waste going to landfills was 12 million tons in 1991 and it drastically decreased to somewhat over 2 million tons by 2008.

Anticipated and observed efficiency of domestic policy instruments (Greece/Netherlands)

| Greece | The Netherlands |
|---|--|
| <ul style="list-style-type: none"> • Understaffing in the administrative and monitoring authorities of REPB associated to low resources and state budget cuts, resulted in low administrative costs hampering however the effectiveness and proper implementation of the Regulation • The contribution fee for implementing Producer's responsibility is considered an efficient instrument for the management of WEEE as it covers high costs associated with the collection procedures, requiring the coordination of multiple actors. • Changing Air Condition Programme is considered inefficient since the market signal induced was too high resulting in a premature termination of the Programme due to increased demand. • The involvement of the private sector in the administrative and evaluation procedures under the 'Energy Saving in households' programme was beneficial for the Programme's efficiency in the sense of relieving the administrative cost burden. | <ul style="list-style-type: none"> • The goal of the EPC was to grant 50.000 customized advices to home owners in the period of 2009-2010 with the means of a temporary subsidy for market advise, but these owners or renters often had no serious intention to save energy. Consequently, the EPCs could have been more efficient if the financial resources had been distributed on a more deliberate way. • The low VAT rate applied to labor and material costs if the material costs were less than 50% of total costs of home insulation. The total amount spent for the temporary subsidy up to 2010 is 28 million €, which amounts to an average cost of 34.21 €/m² of glass insulation for HR+ and HR++ glass with a maximum of 1.100 € per household. In essence, more applications were submitted than the actual program budget. • The costs for the EPR (operational and rebate costs) amounted to 65 million € in 2000 and was more than doubled to 135 million € in 2001. Concerning CO₂ reduction, the EPR saved 210 million kg CO₂ in 2002. The operational costs could have been reduced by more deliberate costs planning. • For the producer responsibility, this system has turned out to be very efficient since the collected amount did not just cover the expenses, but also provided a large amount of reserve. The accumulated tax reserve is quite high (more than € 200 million) that can still cover the expenses of collection and recycling for almost a decade. |

Conclusions – Country Comparisons

| Greece | The Netherlands |
|---|--|
| <ul style="list-style-type: none"> • Reduced levels of national energy consumption are largely attributed to changes in the energy conservation behavior of households usually at the expense of personal comfort or satisfaction. • The increased efficacy of subsidies and soft loans was offset mainly due to the recessionary environment (i.e. difficulties in access to finance, lack of liquidity) that often made investments non feasible. • The inclusion of the private sector to deliver administrative and evaluation procedures enhanced the implementation of energy efficiency programmes. • Regulation on Energy Performance for Buildings was | <ul style="list-style-type: none"> • Due to the frequent changes and inconsistency of the EPC policy framework, the trust in the energy label system has drastically decreased. Owing to the inconsistency of the policy framework, companies specialized on energy performance advice suffered huge financial losses. • When energy efficiency interventions/construction activities are carried out, information displayed on the equipment could help customers to purchase the most efficient equipment and help to reach the desired efficiency target. • Waste management measures are indirectly linked to the energy efficiency policies by the fact that |

ineffective in terms of raising awareness on the energy savings potential.

- Energy efficiency policies should be linked with policies for the treatment of various waste streams as a result of the uptake of energy efficiency interventions.
- Monitoring and evaluation mechanisms must be built in to a new regulatory framework, following common monitoring protocols and methods of assessing impacts and efficiency of policy instruments. Public expenditure and re-funding of instruments could thus be justified.

construction activities e.g. replacement of old an inefficient equipment and construction materials generally result in increased amount of waste streams, therefore the national collection and recycling targets have been achieved.

Questions to stakeholders

1. Considering that the Dutch landfill taxation policy was effective but was terminated due to increased administrative costs, and the absence of a similar Greek scheme to encourage industries and households to find alternative ways to collect and process their waste, what other types of policy instrument could have performed more cost-effectively?
2. The Greek Changing Air-Condition programme included specific provision for the treatment of resulting waste streams (i.e. airconditions) that enhanced waste collection and treatment to a significant extent. Should energy efficiency policies be linked with waste-treatment policies integrating similar provisions for waste collection and treatment?
3. Unlike the case of the Netherlands, environmental awareness on the benefits of energy efficiency in Greece has remained limited due to fragmented information campaigns. At the same time, lack of proper enforcement of the Buildings Regulations was the result of inadequacies in the monitoring system of the mechanism. Under the current economic constraint where should the Greek government turn its focus and resources first?
4. Energy Efficiency subsidy schemes have underperformed largely due to the unfavorable investment climate. Considering the new property tax recently imposed on the Greek electricity consumers and the fact that Greece holds the second biggest share of private tenants in Europe, would other types of energy efficiency programmes be more efficient within the given recessionary environment (e.g. Property Assessed Clean Energy programs).
5. In other words, what is the optimal financial policy mix for buildings in the period of a declining economic activity environment? Are subsidies useful when households cannot cover the upfront costs? Maybe policies on the 'upper' part of the chain would make more sense (i.e. project developers).