

1. Guidelines for using the interaction facility

1.1. Status and aim of the tool

The interaction facility regards the first applicable version which is meant to be used by the country experts that participate in the Odyssee/MURE project.

The aim of the interaction application is to support the user of the MURE database to take account of policy measure interaction, and thereby better evaluate savings policy of countries. The results of the interaction analysis will depend for a large part on the quality of the following inputs to the MURE database:

- completeness of the set of policy measures in the MURE database
- conversion of cross-sector measures to various types of sectoral policy measures
- characterization of policy measures as to type
- rating of the qualitative impact of each policy measure..

The database should contain all policy measures that are currently influencing the implementation of energy savings measures. In this respect it is also important to convert cross-sector measures to specific sectoral policy measure.

The specified type (at c3-level) should be such that the right interaction type is connected to the policy measure. However, in some cases the MURE database does not offer an appropriate c3-type to characterize the policy measure.

The rating of the qualitative impact (High, Medium or Low) should be based on the impact in isolation of other policy measures that focus on the same targeted end-use. The reason being, if the impact should already take account of interaction, this effect is counted twice when applying the interaction approach.

1.2. Role of the user of the tool

The tool interface is totally transparent and allows the user to:

- Select sectors and targeted end-uses for which the interaction analysis is to be performed
- Create an own measures package independent by the targeted end-use
- Remove selected policy measures if these are not useful for the interaction analysis
- Adapt the value of the interaction factor between any combination of two policy measures
- Compare calculated results with available quantitative impact figures (optional).

Moreover, the user can improve the results of the interaction analysis by:

- Add policy measures that have a substantial impact (Medium or High) and do interact with other policy measures
- Check whether policy measures have been given the right type at c3-level
- Rate the qualitative impact rightly, i.e. with High = > 0.5% savings, Medium = 0.1 – 0.5% savings and Low = < 0.1% savings.

1.3. Guidelines for using the tool

The operational sequences follow by close the methodology outlined in sections 3.6 to 3.8. and translate into the corresponding quantitative parameters of **Errore. L'origine riferimento non è stata trovata.**. The following figures show the interaction analysis procedure as it has been so far experimentally developed. The entire procedure entails three main steps.

In the first step the user is asked to select the country and the targeted end-use for which he wants to evaluate the measures impact. As example Figure 1-1 shows “Germany” as country and “Space heating new dwellings” as targeted end-use for the household sector.

Mure Home Query Radar Graphs Summary Tables Topics Areas Successful Measures Policies Interaction Policy

HOUSEHOLD TERTIARY INDUSTRY TRANSPORT

Select the country, the targeted end-use, then click on the button Submit to calculate the energy saving of the measures package

Germany Space heating new dwellings Submit

Figure 1-1: Step 1 - Selection of Country and Targeted end-use

Once selected these two main options by clicking on the “Submit” button the system provides the calculation table shown in Figure 1-2. This table is divided in three columns. The first column provides the policy measures for the selected targeted end-use (in this case “space heating new dwellings”). The second column shows the measures types to which they belong (opportunately “adapted”, see paragraph **Errore. L'origine riferimento non è stata trovata.**). The third column shows the impact evaluation.

The impact figure per policy measure is simply the rough translation of the estimated qualitative impact of the measures, defined as a percentage of the electric and thermal energy consumption of the analysed sector. To better calculate the impact the user is then allowed to put the actual impact by measure in the light blue cells of the table.

The “Simple Sum” shows the arithmetic sum of the impact per policy measure. The “Combined Impact” is the sum. Corrected for the effect of the interaction. The difference between these two is called “Overlap/reinforcing”

German measures having the same targeted end-use

Country: Germany Targeted end-use: Space heating in existing dwellings (insulation and boiler)

Measure Types (adapted)

Quantitative impact evaluation

Code	Measure Title	Types group	Qualitative Impact	En. Saving (PJ)	% of Saving
HOU-AU5	Minimum thermal standards for buildings	Leg-norm/Invest	High	1,824	0,70%
HOU-AU8	Heating cost settlement for common thermal facilities	Leg-norm/use	Medium	0,782	0,30%
HOU-AU21	EU-related: Energy Performance of Buildings (Directive 2002/91/EC) - Energy Certificates for Buildings (Energieausweis für Gebäude)	Leg-inform/focus (label)	High	1,824	0,70%
HOU-AU26	National recovery plan / renovation voucher	Finan-fiscal/Invest	Unknown	0,000	0,00%
HOU-AU13	Residential building subsidy	Finan-fiscal/Invest	High	1,824	0,70%
HOU-AU27	Energy advice for households	Inform/broad (center, etc.)	Unknown	0,000	0,00%
HOU-AU28	Smart Metering and Informative Billing	Inform/broad (center, etc.)	Unknown	0,000	0,00%
GEN-AU3	Agreement between Federal and provincial government concerning energy conservation	Leg-norm/Invest	Medium	0,782	0,30%
GEN-AU10	EU-related: Community framework for the taxation of energy products and electricity (Directive 2003/96/EC) - Energy and transport taxes	Leg-norm/Invest	Simple sum	0,000	0,00%
GEN-AU9	Domestic Environmental Support	Finan-fiscal/Invest	High	1,824	0,70%
Sum of impacts (without interaction)				8,860	3,40%
Combined impact (with interaction)				7,861	3,02%
Difference (combined impact - sum of impacts)				-0,999	-11,27%

Modify the impact values and click the button Calculation to make your own evaluation. Click the button Measures interaction to see default values

Some measure may be related to more than one types group, in this case you can select the one of primary types group in the related list box

Calculation Reset

Click on the button below to view and/or modify the measure types group interaction matrix

Click on the button below to select the measures to be included in the calculation

Interaction matrix adaptations Measure selection

Figure 1-2: Step 2 – Impact calculation for Country and Targeted end-use

As outlined before, it is possible to analyse and even change this interaction matrix. Actually by clicking on the “Interaction matrix adaptation” button, the tool provides the table shown in Figure 1-3.

Green cells = involved types

of the interaction matrix by choosing from the related list boxes, then click the button Confirm to make your own evaluation

	Leg-norm/Invest	Leg-norm/use	Leg-inform/focus (label)	Leg-inform/broad (audit)	Finan-fiscal/Invest	Finan-fiscal/use (tariff)	Finan-fiscal/info (audit)	Inform/focused-invest	Inform/broad (center, etc.)	Coop/focused (VA-manufacturers)	Coop/broad (VA-sector)	Cross-cutting/taxes
Leg-norm/Invest	Green											
Leg-norm/use	Some overlap	Green										
Leg-inform/focus (label)	Strong overlap	Not interacting	Green									
Leg-inform/broad (audit)	Strong overlap	Not interacting	Strong overlap	Green								
Finan-fiscal/Invest	Strong overlap	Some overlap	Strong reinforcing	Reinforcing	Green							
Finan-fiscal/use (tariff)						Green						
Finan-fiscal/info (audit)	Strong overlap	Overlap	Overlap	Strong overlap	Some reinforcing		Green					
Inform/focused-invest	Strong overlap	Not interacting	Strong overlap	Strong overlap	Some reinforcing		Strong overlap	Green				
Inform/broad (center, etc.)	Some overlap	Strong overlap	Not interacting	Some overlap	Not interacting		Some overlap	Not interacting	Green			
Coop/focused (VA-manufacturers)	Strong overlap	Not interacting	Some reinforcing	Some reinforcing	Some reinforcing		Some overlap	Not interacting	Some overlap	Green		
Coop/broad (VA-sector)	Strong overlap	Some overlap	Some overlap	Not interacting	Some reinforcing		Some overlap	Some overlap	Some overlap	Strong overlap	Green	
Cross-cutting/taxes	Overlap	Overlap	Some reinforcing	Some reinforcing	Overlap		Some reinforcing	Some reinforcing	Strong reinforcing	Some reinforcing	Some overlap	Green

Confirm Reset

Figure 1-3: Step 3 – Checking the interaction matrix

This matrix is exactly that described in paragraph **Errore. L'origine riferimento non è stata trovata.** and the “green” cells show which are the measures types involved by the 12 German measures shown in Figure 1-2.

By clicking on each of the green cells the user can change the interaction level of the involved measure types and in this way change the entire interaction scheme suggested by the tool (see Figure 1-4).

Once having set the interaction matrix, the user can confirm the changes (or reset everything and thus come back to the initial setting) and return to the calculation table to see the new interaction calculation. In the private area of the MURE website it is also possible to change and customize the quantitative parameters of the interaction levels.

	Leg-norm-invest	Leg-norm-use	Leg-inform-focus (label)
Leg-norm-invest			
Leg-norm-use	Some overlap		
Leg-inform-focus (label)	Strong overlap	Not interacting	
Leg-inform-broad (audit)	Strong overlap	Strong reinforcing	Strong overlap
Fin/fiscal-invest	Strong overlap	Not interacting	Strong reinforcing
Fin/fiscal-info (audits)	Strong overlap	Some overlap	Overlap
Inform-invest (certif)	Strong overlap	Not interacting	Strong overlap

Figure 1-4: Step 3 – Modifying the interaction matrix settings

As explained in chapter 4.2, some measure may be included in the calculation, the user can decide which of these measures must be involved in the interaction package, to avoid double counting. By clicking on “Measure selection” a dedicated screen allows to do that.

Thick the check box beside the measure title to include a Cross-Cutting measure in the policy interaction calculation		
GER11	National Climate Protection Programme	Include <input checked="" type="checkbox"/>
GER19	National Energy Efficiency Action Plan (NEEAP) of the Federal Republic of Germany	Involved <input checked="" type="checkbox"/>
GER20	Integrated Energy and Climate Programme of the German Government	Include <input type="checkbox"/>
GER29	National Climate Initiative (Nationale Klimainitiative, NKI)	Include <input checked="" type="checkbox"/>

Confirm

Figure 1-5: Step 4 – Measures selection

By selecting the voice “Your own measures package” from the Targeted end-uses pop-up list, A specific ‘ad hoc’ measures package may be created, by the user, independently from the targeted and-use, including/excluding the measures as shown if figure 1-5.

Select the country, the targeted end-use class, then click on the button Submit to calculate the energy saving of the measures package

Austria Your own measures package Submit

Group	Qualitative Impact	En. Saving (PJ)
Invest	High	1,824

Space heating in existing dwellings (insulation and boiler)
 Heating new dwellings (Space cooling, electric)
 Hot water preparation
 Appliances
 Renewable energy (behind the meter)
 Your own measures package

Figure 1-6: Step 5 – Measures package independent from targeted end-use

The policies interaction tool allows the user to play with some sensitivity analysis:

- Evaluation of impact of the different measure types in the case a policy measure is related to more than one measure type
- Different percentage of thermal energy in the case the selected targeted end-use refers to thermal and electric consumption (default=80%)
- Specific measure energy saving (quantitative impact evaluation) different by the default figure

Make your own modification and click on the button “Calculation”.

Click on the button “Reset” to restore the original figures.

	Types group	Qualitative Impact	En. Saving (PJ)	% of Saving
en "Blauer Engel")	Inform/focused-inve	Low	2,414	0,10%
002/91/EC) - Energy Savings g - EnEV)	Leg-norm/use	High	16,895	0,70%
(Directive 2010/31/EU) - Energy 013	Leg-norm/use	High	16,895	0,70%
2/91/EC) - Länder activities in the	Leg-norm/invest	High	16,895	0,70%

Figure 1-7: Step 6 – 1 Measure N Measure types

percentage of thermal energy: 80

	Types group	Qualitative Impact	En. Saving (PJ)	% of Saving
ischen "Blauer Engel")	Inform/focused-invest	Low	2,414	0,10%
e 2002/91/EC) - Energy Savings ung - EnEV)	Leg-norm/use	High	16,895	0,70%
ast (Directive 2010/31/EU) - Energy 1 2013	Leg-norm/invest	High	16,895	0,70%
002/91/EC) - Länder activities in the	Leg-norm/invest	High	16,895	0,70%
onstruction"	Finan-fiscal/invest	High	16,895	0,70%

Figure 1-8: Step 6 – Specific measure impact evaluation