

Welcome and introduction

Jonathan Bain

Second Stakeholder Meeting
Brussels, Belgium, June 4th 2010

A study being conducted for DG ENTR by Bio Intelligence Service



Pioneer in quantification tools and support for decision-making

- Specialists in the measurement environmental and health quality of products and services in France and Europe
- At the interface of the environment and products, a large range of services for public and private decisions makers

- Life cycle assessment
- Environmental labelling of products
- Eco-design of products
- Greening the supply chain
- Assessment of public policies

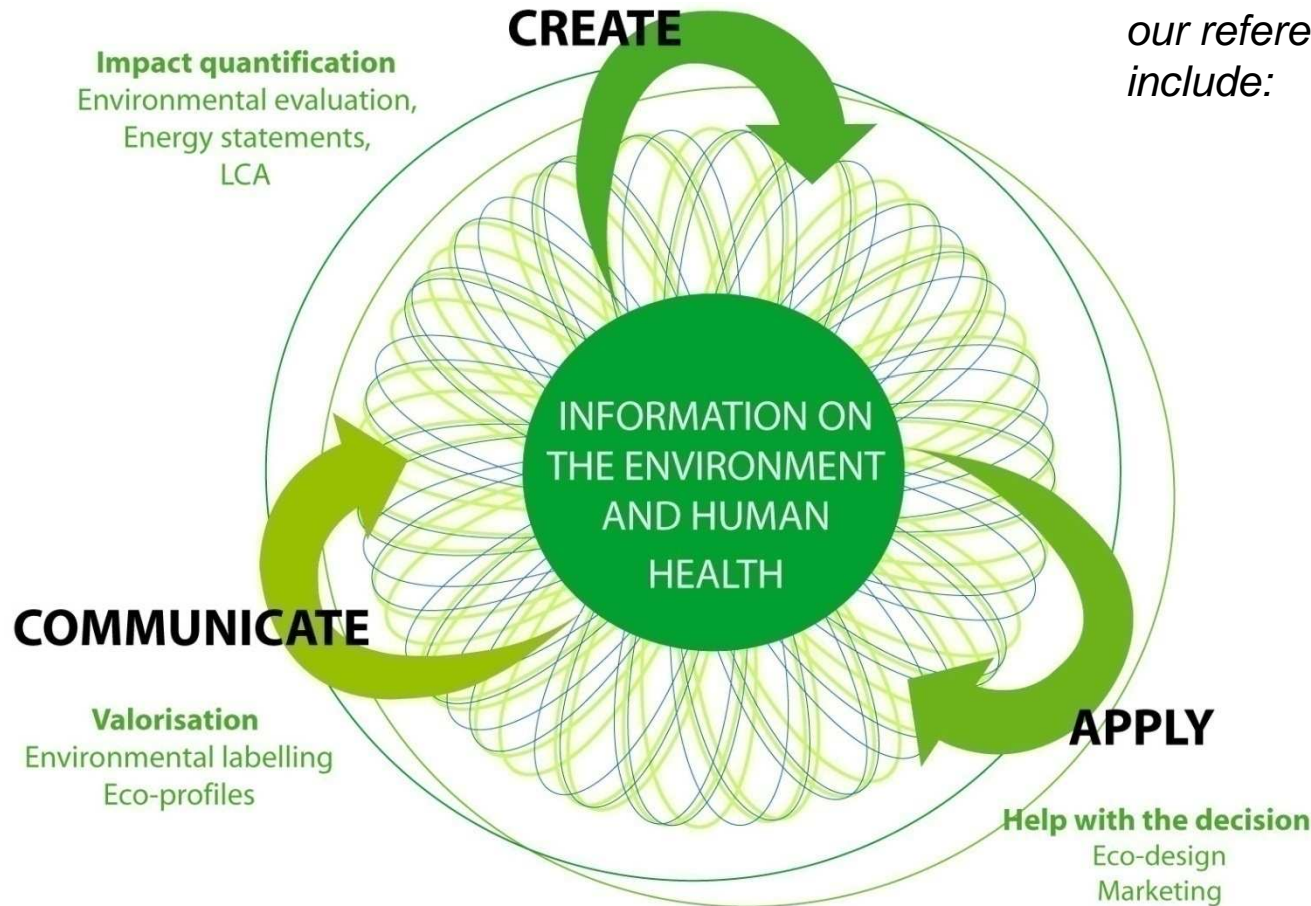


- Energy
- Agri-food
- Construction
- Retail
- Industry
- Transport
- Waste
- Services



BIO's activities

Since 1989,
our references
include:



BIO Intelligence Service:

- Pierre Sonigo
- Benoit Tinetti
- Jonathan Bain
- Raul Cervantes
- Ian Kuwahara
- Alvaro de Prado Trigo
- (Shailendra Mudgal)

External consultants:

- Per Hendrik Pedersen
- Philippe Riviere
- (Mark Ellis)

Commission project officer:

- Laure Baillargeon



Scope

- Service cabinets
- Blast cabinets
- Walk-in cold rooms
- Industrial process chillers
- Remote condensing units
- Water dispensers
- Ice-makers
- Dessert and beverage machines
- Minibars
- Wine storage appliances

10:00 – 10:20	Welcome, “Tour de table”
10:20 – 10:30	Introduction to the Ecodesign Directive
10:30 – 10:40	Horizontal session: Progress update and selection of Base Cases
10:40 – 11:30	Product focus: Walk-in cold rooms
11:30 – 11:50	COFFEE BREAK
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17:20 – 17:30	Conclusions, next actions and AOB

Base Case

- An abstract construct representing the average product on the market

Functional unit

- The basis for comparison between similar products when performing lifecycle analysis
- E.g. one unit of storage maintained at a specific temperature

Performance parameter

- The means of comparing performance of similar products, using the functional unit and product consumption/impact
- E.g. annual electricity consumption of product divided by number of functional units it provides

The Ecodesign Directive and the MEEuP methodology

Benoît Tinetti

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Directive 2009/125/EC of the European Parliament, **Framework Directive** for the setting of ecodesign requirements for **Energy-related Products (ErP)**

- Promotion of sustainable development through free movement of energy using products, environmental protection and increased security of energy supply
- Better regulation: efficient decision making, consultation and self regulation

“Energy-related product means any good that has an impact on energy consumption during use which is placed on the market and/or put into service”

This Directive supersedes the former EuP Directive (2005/32/EC) which covered only Energy-using Products.

Scope of the Directive:

- All Energy-related Products (except transport)
- Specific **product categories** for ecodesign requirements

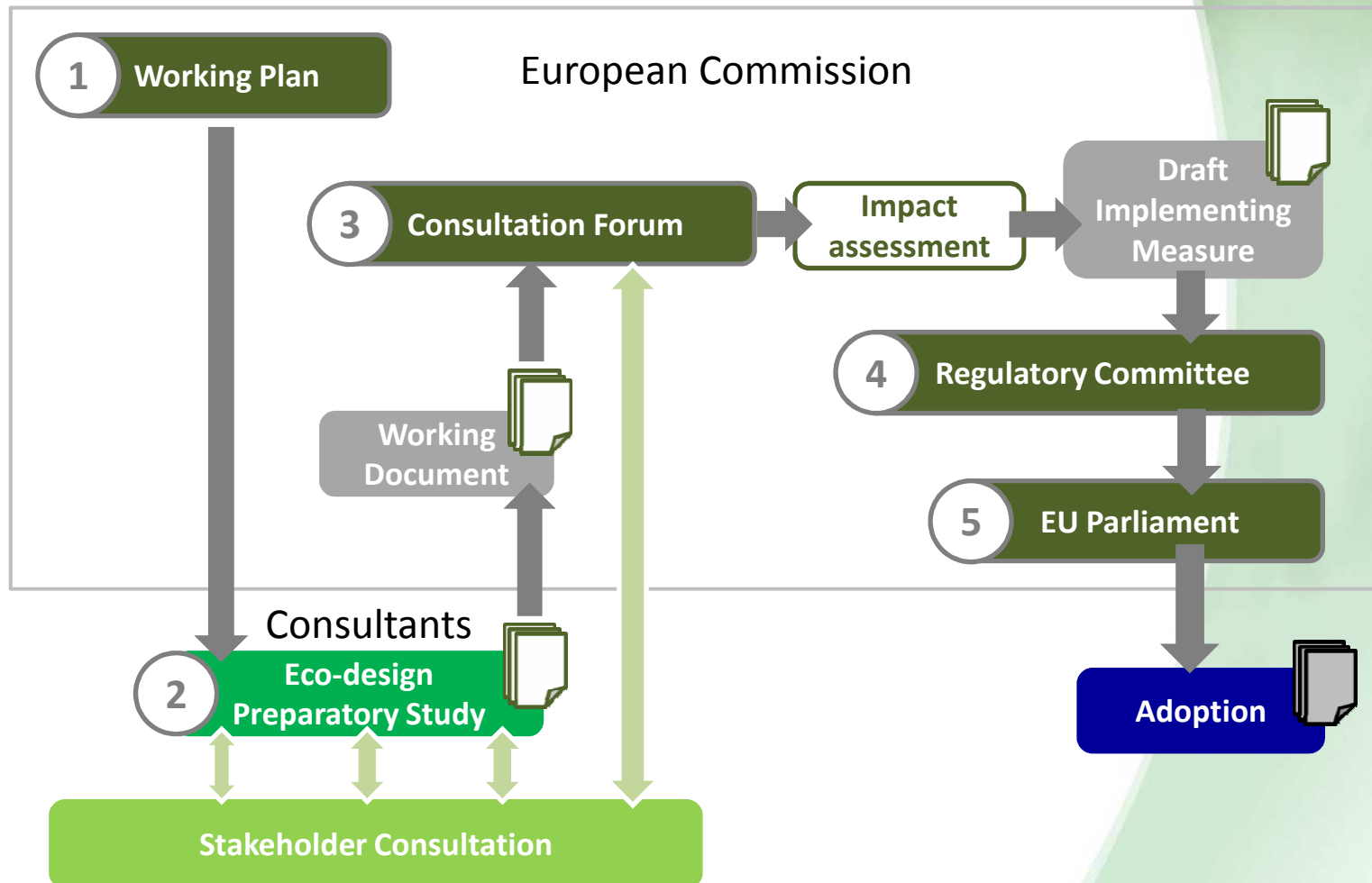
Measures of action:

- Setting of ecodesign requirements (**Implementing Measures**)

Implementing Measures

- could be proposed for product categories which:
 - represent a significant volume of products placed on the EU market (> 200.000 units/year),
 - involve a significant environmental impact, and
 - present a significant potential for improvement
- are to be based on
 - environmental assessments / relevant product characteristics and functionality
 - products and technologies available on the market should be taken as reference
- IM should preserve the interests of industry, consumers and other stakeholders

From a Preparatory Study to Implementing Measures



Ecodesign preparatory studies

2006: 14 lots DG ENER (completed)

- lot 1 boilers and combi-boilers
- lot 2 water heaters
- lot 3 personal computers
- lot 4 imaging equipment
- lot 5 consumer electronics (TV) *
- lot 6 standby and off-mode losses *
- lot 7 battery chargers and external power supplies *
- lot 8 office lighting *
- lot 9 (public) street lighting *
- lot 10 residential room conditioning appliances
- lot 11 electric motors 1-150 kW, pumps, circulators, fans *
- lot 12 commercial refrigerators and freezers
- lot 13 domestic refrigerators and freezers *
- lot 14 domestic dishwashers and washing machines

2008: 3 lots DG ENTR

- lot 1 commercial refrigerators and freezers
- lot 2 transformers (power and distribution)
- lot 3 DVD players, video projectors, etc.

2007: 5+1 lots DG ENER (completed)

- lot 15 solid fuel small combustion installations
- lot 16 laundry dryers
- lot 17 vacuum cleaners
- lot 18 complex set-top boxes
- lot 19 domestic lighting *
- + simple set-top boxes *

2008: 8 lots DG ENER

- lot 20 individual room heating
- lot 21 central heating (hot air)
- lot 22 ovens
- lot 23 hobs and grills
- lot 24 washing machines, etc. PRO
- lot 25 coffee machines
- lot 26 network standby

2009: 3 lots DG ENTR

- lot 4 industrial furnaces and ovens
- lot 5 machine tools
- lot 6 air-co and ventilation systems

Preparatory Studies, Methodology overview

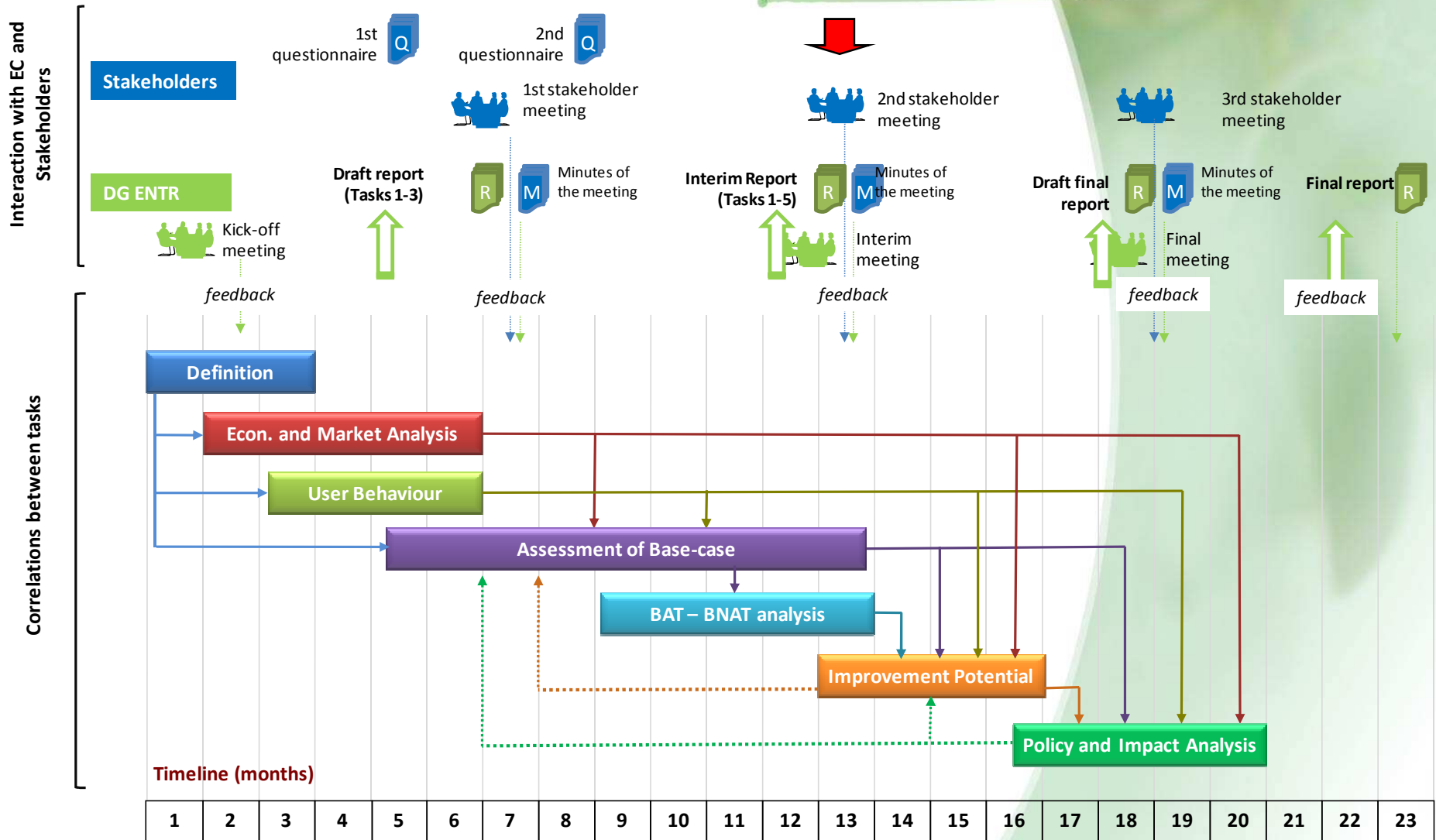
- A uniform approach adopted for all the lots commissioned by DG ENTR

Methodology for Eco-design of Energy-using Products - MEEuP:

- | | | | |
|-----------|------------------------------------|---|-----------------------|
| ➤ Task 1: | Definition (Product/Standards) | } | Present situation |
| ➤ Task 2: | Economic and Market Analysis | | |
| ➤ Task 3: | User Behaviour | | |
| ➤ Task 4: | Assessment of Base-Case | | |
| ➤ Task 5: | Technical analysis of BAT and BNAT | } | Improvement potential |
| ➤ Task 6: | Improvement Potential | | |
| ➤ Task 7: | Policy and Impact Analysis | | |

http://ec.europa.eu/energy/demand/legislation/eco_design_en.htm#studies

General Approach (2/2)



Legend

- task 1
- task 2
- task 3
- task 4
- task 5
- task 6
- task 7

Preparatory Studies, Methodology overview

● **Task 1: Definition**

- define the product category and define the system boundaries of the 'playing field' for eco-design
- identify the harmonised test standards and additional sector-specific procedures for product-testing
- identify the existing relevant legislation, voluntary agreements, and labelling initiatives at the EU and MS level, as well as outside Europe

1.1 Product definition

1.2 Test and other Standards

1.3 Existing legislation (including labelling and voluntary programs)

Preparatory Studies, Methodology overview

● Task 2: Economic and Market Analysis

- place the product group within the total of EU industry and trade policy
- provide market and cost inputs for the EU-wide environmental impact of the product group
- provide insight in the latest market trends
- provide a practical dataset of prices and rates to be used in a Life Cycle Cost (LCC) calculation

- 2.1 Generic economic data
- 2.2 Market and stock data
- 2.3 Market and production structures
- 2.4 User expenditure base data

Preparatory Studies, Methodology overview

● Task 3: User Behaviour

- quantify relevant user-parameters that influence the environmental impact during product-life and that are different from Standard test conditions
- identify barriers and restrictions to possible eco-design measures, due to social, cultural or infra-structural factors

3.1 User Information

3.2 User behaviour in the use phase

3.3 End-of-Life behaviour

Preparatory Studies, Methodology overview

● Task 4: Assessment of Base-Case

- general technical analysis of current products on the EU market
- objective is to capture the market on the whole, both “good” and “bad” products
- building on the results of Tasks 1 – 3, and analysis of current products, “one or two average EU product(s)” or product category(ies) have to be defined as the “Base-case” for the whole of the EU-27
- on these Base-Cases most of the environmental and Life Cycle Cost analyses will be built throughout the rest of the study
- functional analysis of the system to which the product belongs, including a rough estimate of the overall impacts

Preparatory Studies, Methodology overview

- Use of the EcoReport tool
- Results consist of environmental impacts assessments and economic analysis

- 4.1 Product-specific inputs
- 4.2 Definition of Base-Case
- 4.3 Base-Case Environmental Impact Assessment
- 4.4 Base-Case Life Cycle Costs
- 4.5 EU-27 total impact

Preparatory Studies, Methodology overview

- Task 5: Technical analysis BAT and BNAT
 - technical analysis of advanced technologies
 - both component and product level
 - provides part of the input for Task 6

5.1 Definition of BAT

5.2 Definition of BNAT



Next Steps

Preparatory Studies, Methodology overview

- Task 6: Improvement Potential
- Task 7: Policy and Impact Analysis

Preparatory Studies, Methodology overview

● Task 6: Improvement Potential

- identify design options, their monetary consequences in terms of Life Cycle Cost for the consumer and their environmental costs and benefits
- Life Cycle Costs: indicate whether design solutions might negatively or positively impact the total EU consumer's expenditure over the total product life (purchase, running costs, etc.)
- pinpoint the solution with the Least Life Cycle Costs (LLCC) and the Best Available Technology (BAT)
- robustness of the outcomes

6.1 Identification of Design options

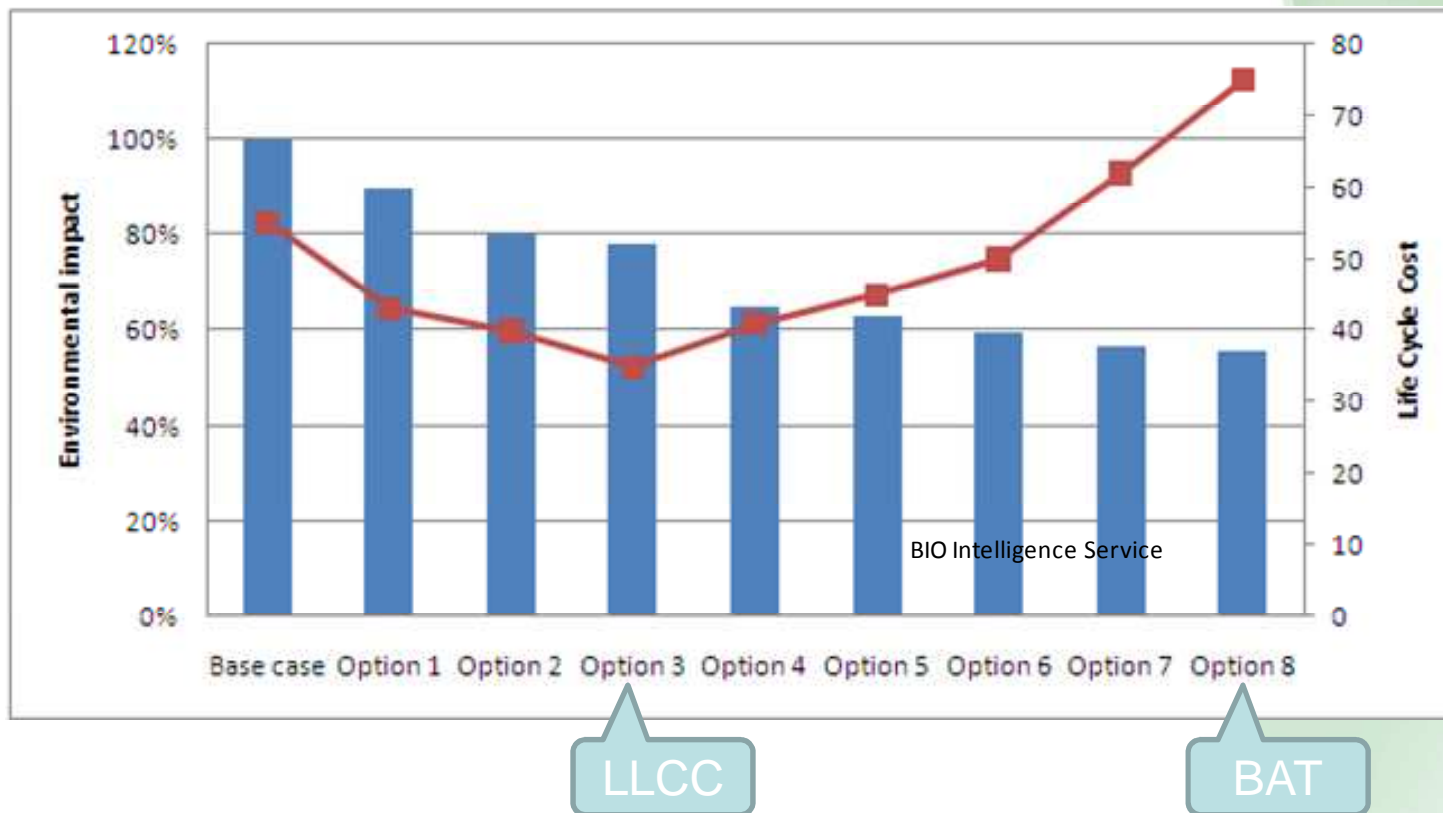
6.2 Analysis BAT and LLCC

6.3 BNAT and long-term systems analysis

6.4 Sensitivity Analysis of the main parameters

Preparatory Studies, Methodology overview

- Analysis of the improvement potential



Preparatory Studies, Methodology overview

● Task 7: Policy and Impact Analysis

- summarise and total the outcomes of all previous tasks
- look at suitable policy means to achieve the potential e.g. implementing LLCC as a minimum and BAT as a promotional target, using legislative or voluntary agreements, labeling and promotion
- scenarios 1990 – 2025 quantifying the improvements that can be achieved vs. a Business-as-Usual scenario
- impacts on consumers and industry

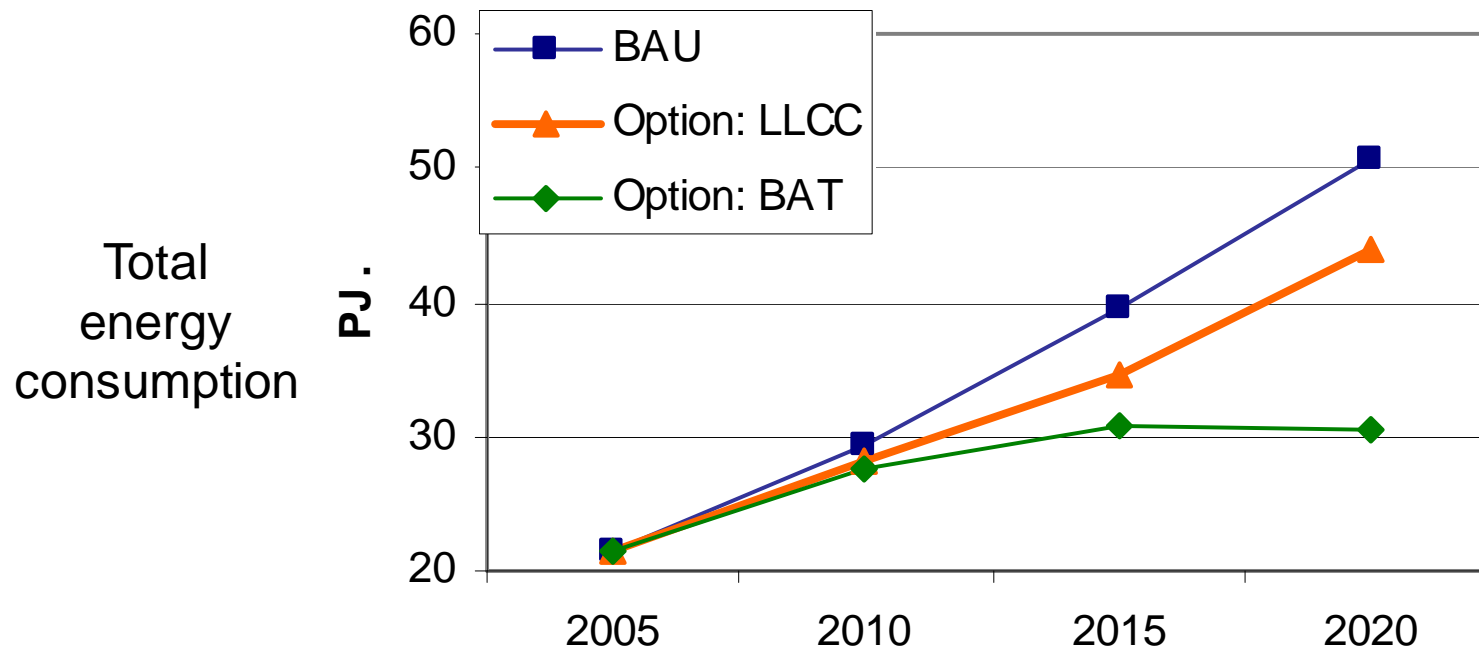
7.1 Policy analysis

7.2 Impact analysis

Preparatory Studies, Methodology overview

Task 7: policy and Impact Analysis

➤ example of scenarios



Progress update and selection of Base Cases

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Selection of Base Cases – Data matrix

ENTR Lot 1	Product type	EU-27 sales [units in 2008]	EU-27 stock [units in 2008]	EU-27 sales [units in 2020]	EU-27 stock [units in 2020]	Estimated average total energy consump. per product [kWh/year]	Approximate lifetime (years of sales to replace stock) [years]	Total stock energy consump. TWh/year (2008)	Total stock energy consump. TWh/year freeze scenario (2020)	Estimated average energy saving potential per product [% in 2020]	Total stock energy consump. TWh/year w energy saving scenario (2020)
Product											
Service Cabinets	Remote	39 744	326 016	44 023	362 162	4 500	8	1,47	1,63	25%	1,35
	Plug-in	357 700	2 934 147	396 207	3 259 454	4 500	8	13,20	14,67	33%	11,37
	Total	397 444	3 260 163	440 230	3 621 615	-		-	-	-	-
Blast Cabinets	Remote	250 000	1 550 000	276 913	1 722 050	6 750	6	10,46	11,62	21%	9,73
	Plug-in	250 000	1 550 000	276 913	1 722 050	6 750	6	10,46	11,62	33%	8,69
	Total	500 000	3 100 000	553 826	3 444 100	-		-	-	-	-
Walk-in cold rooms	Remote	22 072	380 415	24 808	422 593	15 100	16	5,74	6,38	31%	5,99
	Remote + PCU*	22 072	380 415	24 808	422 593	15 100	16	5,74	6,38	39%	5,80
	Plug-in	44 145	760 830	49 615	845 185	15 100	16	11,49	12,76	39%	11,62
	Total	88 289	1 521 659	99 230	1 690 370	-		-	-	-	-
Dessert and beverage machines	-	150 000	1 500 000	166 630	1 666 304	650	9	0,98	1,08	17%	0,97
Industrial process chillers	Packaged	3 911	79 296	4 185	70 941	399 105	17	31,65	28,31	30%	26,68
	Plant	391	7 930	419	7 094	399 105	17	3,16	2,83	30%	2,67
	Total	4 302	87 226	4 604	78 035	-		-	-	-	-
Water dispensers	Bottled water	222 222	2 000 000	250 000	2 222 200	950	8	1,90	2,11	23%	1,79
	Mains water	55 556	500 000	62 500	555 550	950	8	0,48	0,53	23%	0,45
	Total	277 778	2 500 000	312 500	2 777 750	-		-	-	-	-
Ice-makers	-	120 148	985 756	133 081	1 095 052	5 000	8	4,93	5,48	10%	5,10
TOTAL	-	1 797 220	15 917 767	2 038 990	17 662 115	-		102	105	-	92
*Packaged condensing units (PCU)	-	259 259	2 962 963	328 889	3 288 889	22 359	10	66,25	73,54	23%	63,38

Base Cases selected in 2009 based on matrix:

- Plug-in service cabinets, blast cabinets, walk-in cold rooms
- Packaged industrial process chillers and condensing units

Current scope – Base Cases are no longer based on these:

- Service cabinets, blast cabinets, walk-in cold rooms, industrial process chillers and remote condensing units

Requirement to have manageable number of Base Cases, as described in common methodology:

- Resources limited
- Legislative burden