

EuP – Lot 24: Professional washing machines, dryers and dishwashers

Introduction & Brief overview on Task 1 and 2

Final Stakeholder Meeting on washing machines and dryers
Brussels, January 12th 2011

(Öko-Institut e.V. / Bio Intelligence Service)



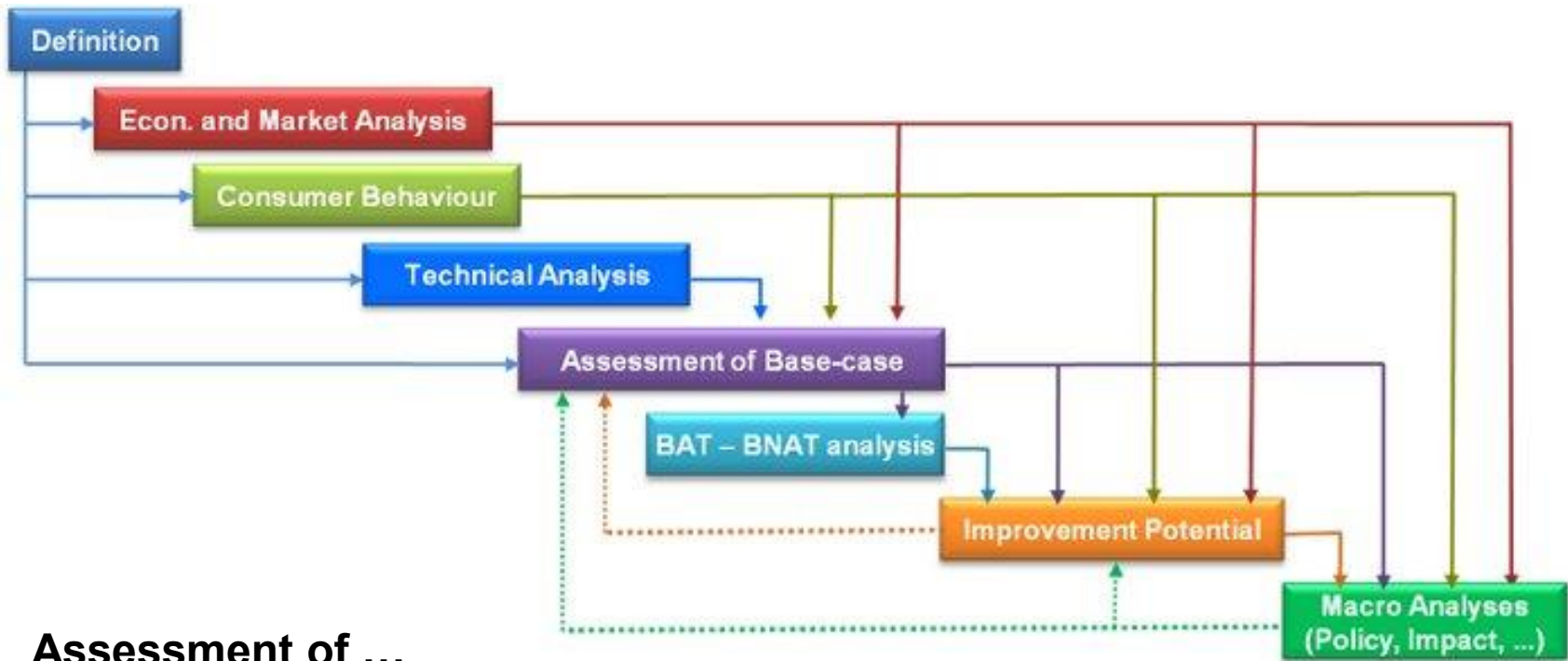
Agenda

10:00 – 10:15	Welcome of participants / Introduction and Scope of the Meeting
10:15 – 10:45	Brief overview on draft final state of Task 1 and Task 2
10:45 – 11:45	Presentation and discussion of draft final state of Task 3 (Consumer Behaviour)
11:45 – 12:15	Presentation and discussion of draft final state of Task 4 (Technical Analysis)
12:15 – 13:00	Presentation and discussion of Task 5 (Base Cases)
13:00 – 14:00	<i>Lunch break</i>
14:00 – 15:00	Presentation and discussion of Task 6 (BAT / BNAT Analysis)
15:00 – 15:45	Presentation and discussion preliminary results of Task 7 (Improvement Potential)
15:45 – 16:15	Presentation and discussion of preliminary results of Task 8 (Policy Options)
16:15 – 16:30	Further proceeding, any other business
16:30	End of meeting

Scope of the study

- Preparatory study identifying and recommending ways to improve the environmental performance of the product throughout its lifecycle in the design phase.
- Product groups:
 - Professional dishwashers → Part I
 - **Professional washing machines** → **Part II**
 - **Professional dryers** → **Part II**

Tasks



Assessment of ...

... present situation

... improvement potential



Project Team – Responsibilities among the partners

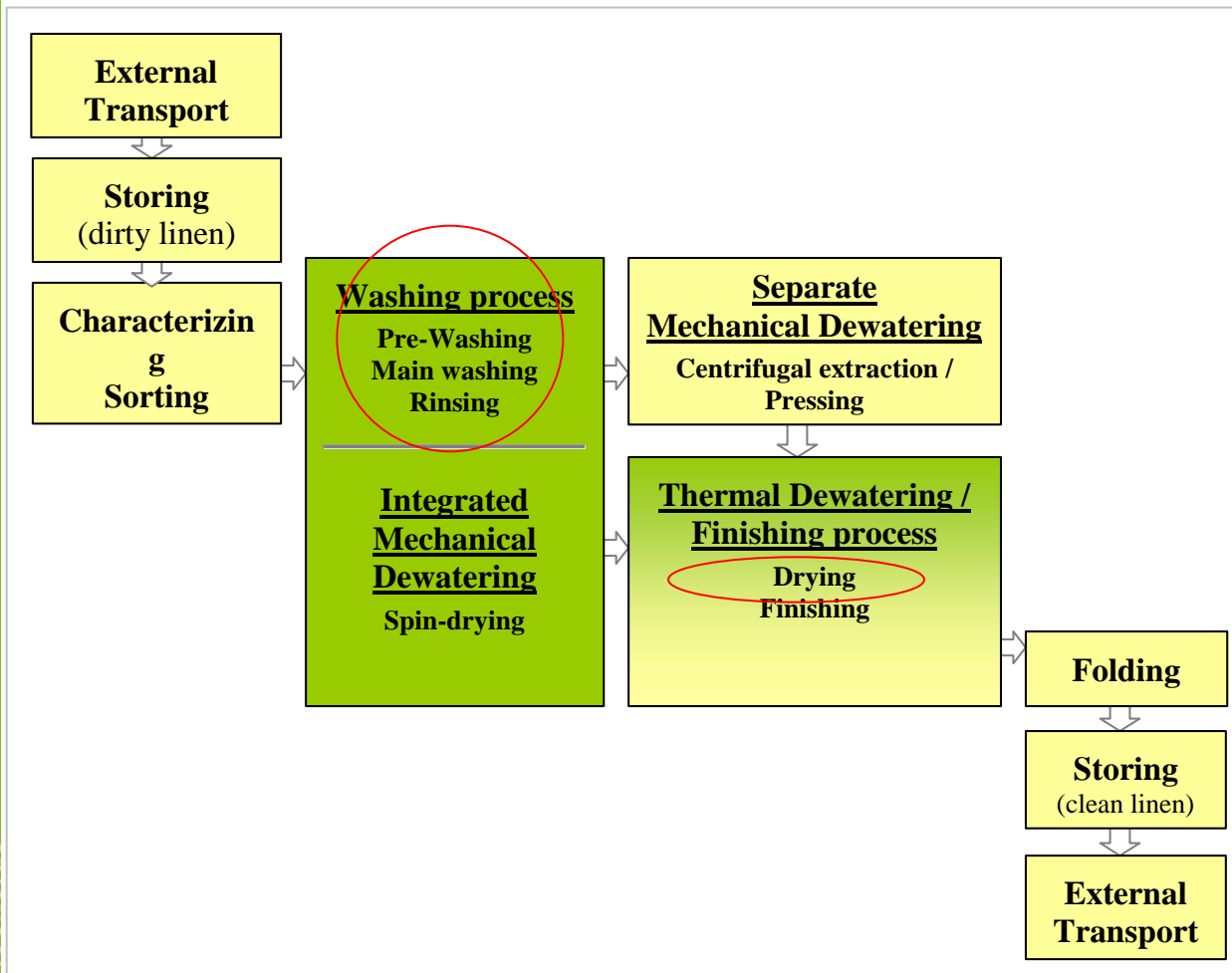
	Öko-Institut (project manager)	BIO IS
Horizontal Tasks		
Overall Project management		
Lot-specific Website		
Part A: Present Situation		
1. Definition		
2. Economic and Market Analysis		
3. Consumer behaviour and local infrastructure		
4. Technical Analysis Existing Products		
5. Definition of Base-Case		
Part B: Improvement Potential		
6. Technical Analysis BAT		
7. Improvement Potential		
8. Scenario-, Policy-, Impact- and Sensitivity Analysis		

Task 1 – Product definition

Structure:

- 1. Product category and performance assessment**
- 2. Test standards**
- 3. Existing legislation + labelling**

Different steps of a laundry process



In previous preparatory studies on household appliances

- washing machines have been discussed as “**wet appliances**” within Lot 14
- laundry dryers have been dealt with in Lot 16

In Lot 24, we consider washing machines and dryers as one module of the whole laundry process and therefore integrate the discussion on washing machines and dryers.

Classification according to market areas/customer segments

1. **Coin & Card Laundry (CCL):** laundrette, camping, student dorms, real estate etc. and **Apartment Household Laundry (AHL):** household, real estate, old people's homes etc; the users are not the owners and therefore safety and easy handling are the most important issues.
2. **Hospitality Laundry (HPL):** hotels, restaurants, quick service restaurants etc.
3. **Healthcare Laundry (HCL):**
 - Healthcare Nursing Home (HN)** with hygiene demands.
 - Healthcare Hospital (HH)** with very high hygiene demands
4. **Commercial Industrial Laundry (CIL):** service providers, textile rent cleaning, small or heavy duty laundries etc.
5. **Speciality Laundry (SP)** including high-tech industries (mops, functional garments like fire and rescue service or offshore, pharmaceutical and electronic factories).

Terms and range of applications (I)

There is no clear definition and no official or standardised definition or delimitation of the terms **semi-professional**, **professional**, **commercial** and **industrial (heavy duty)** . These names are all used differently by manufacturers, regarding market/customer areas and regarding equipment



→The boundaries between these areas of application are rather fluid

Terms and range of applications (II)

- CENELEC TC59X proposed that the term “commercial” shall be used in connection with *market and market segments*. The term “professional”, however, shall be used in connection with *equipment* designed for use in commercial segments
- CENELEC TC59X decided to clarify their understanding of the terms commercial, professional, industrial and to decide which of them are inside the scope of TC59X on one of their next meetings

→in Lot 24, we will apply the term “professional” for washing and drying appliances used in commercial and / or industrial market segments.

Definition of professional washing machines and dryers

“**Professional washing machine**” means an automatic washing machine which cleans and rinses textiles using water, which might also have a spin extraction function and which is designed to be used principally for professional purposes“.

“**Professional dryer**” means an automatic dryer which dries a load of damp clothing or other textiles by removing the moisture by evaporation and which is designed to be used principally for professional purposes“.

- Distinction between household and professional based on Machinery Directive (2006/42/EC) and Ecodesign Regulation: intended use as stated by manufacturer

Categories for professional washing machines and dryers

- WM1: Semi-professional washer extractor**
- WM2: Professional washer extractor, < 15 kg**
- WM3: Professional washer extractor, 15-40 kg**
- WM4: Professional washer extractor, >40 kg**
- WM5: Professional wash dryer**
- WM6: Professional barrier washer**
- WM7: Washing tunnel machines**

- D1: Semi-professional dryer, condenser**
- D2: Semi-professional dryer, air vented**
- D3: Professional cabinet dryer**
- D4: Professional tumble dryer, <15 kg**
- D5: Professional tumble dryer, 15-40 kg**
- D6: Professional tumble dryer, >40 kg**
- D7: Pass-through (transfer) tumble dryer**

Performance of professional laundry machines (I)

- **ISO 9398 (international)** - Specifications for industrial laundry machines – Definitions and testing of capacity and consumption (energy and water) characteristics
 - Measurement method for energy and water consumption → according to stakeholders it is not suitable for a performance classification due to insufficient reproducibility
- **IEC 60456 (international)** - Clothes washing machines for household use – Methods for measuring the performance
- **IEC 61121 (international)** - Tumble dryers for household use – Methods for measuring the performance
 - main harmonised standards in the EU regarding the performance of washing machines and tumble dryers for *household use*.
 - provide a possible facility for a principal performance characteristics for the professional (however presumably not industrial) equipment.
 - Furthermore the standard EN 61121 is the basis for the European mandatory energy labelling scheme.

Performance of professional laundry machines (II)

Currently used performance testing methods

- The Danish Technological Institute already performed examples of test methods and programmes for professional washing machines (compared to WM1 / WM2 category).
- Energy and water consumption as well as washing and rinsing performance of professional washing machines have been measured for different programmes, temperatures and loads.
- The data have been measured following the test standard EN 60456.

General test condition parameters	Household test standard conditions EN 60456 in coming Eco-design version	Test conditions for professional machines as performed at Danish Technological Institute	Industrial standard conditions (ISO 9398-4)
Standard foresees the following measurements			
Washing performance	X	X	Not possible
Spin extraction performance	X	X	X
Rinsing performance	Not used in label test	X	
Temperature		X	
Energy, water and programme time	X	X	X

Performance of professional laundry machines (III)

Current initiatives on standardisation of performance testing methods

- Technical Committee CENELEC/TC59X decided to settle a working group (take place in November 2009 “Laundry machines for commercial use” → CENELEC/TC59X/SWG 1.12
- To develop performance standards for laundry machines for commercial use
- Official document: Reflections and concerns of CENELEC/TC59X/SWG 1.12 regarding the outcome of performance standards for commercial laundry machines

→ *The results of the communication and discussion will be updated in the final report.*

European Legislation

- Machinery Directive 2006/42/EC (replacing 98/37/EC)
- Low Voltage Directive (LVD) 2006/95/EC
- Electromagnetic Compatibility (EMC) 2004/108/EC
- RoHS Directive (2002/95/EC) → Recast: open scope
- WEEE Directive (2002/96/EC) → Recast: clarify scope (amongst others)
- Gas Appliances Directive GAD (2009/142/EC)
- Detergents Regulation (2004/648/EC)
- **Biocide Directive 98/8/EC**
- **Commission Regulation (EC) No. 842/2006 – Fluorinated GHG**
- **Water Directive 2000/60/EC**
- **Commission Regulation (EC) No. 1275/2008 – Standby**

National Legislation

- Legislation at Member State level
 - ✓ ElektroG (German)
 - ✓ Water Regulations Advisory Scheme - WRAS (GB)
 - ✓ BS 6920-2-1: 2000+A3:2008
- Legislation in third countries
 - ✓ USA → Energy Conservation Standards for [...] Certain Commercial and Industrial Equipment (Commercial Clothes Washers)
 - ✓ **California's Appliance Efficiency Regulations (only commercial clothes washers)**

We have also checked for **CANADA, CHINA, AUSTRALIA, RUSSIA**, however, no information on professional washing machines and dryers has been found

Environmental labelling

- Energy Star for Commercial clothes washers (USA) → Effective since July 1, 2009, scheduled revision in January, 2011
- Energy Star for Commercial clothes washers (Canada)
- **Nordic Ecolabelling of Laundries → Criteria document version 2.0 from 27 April 2010**
- **Thai Green Label TGL-17-98 Laundry services and dry cleaning services (1998)**

Task 2 – Economic and market analysis

2.1. Generic economic data: production, exports, imports

2.2. Market and stock data: installed base, annual sales growth rate, average product life, real EU consumption

2.3. Market and production structures: market & production structure, general trends in product design, redesign cycle

2.4. User expenditure base data: electricity, gas, detergents, repair & maintenance, installation, disposal

After the interim meeting, product categories were modified
New estimates of units sold:

Product type	Estimated number of units sold per year
Laundry machines	
WM1: Semi-professional washer extractor	26 000
WM2: Professional washer extractor, <15 kg	47 500
WM3: Professional washer extractor, 15-40 kg	6 500
WM4: Professional washer extractor, >40 kg	250
WM5: Professional washer dryer	200
WM6: Professional barrier washer	850
WM7: Washing tunnel machine	250
Total washing machines	81 550

Product type	Estimated number of units sold per year
Dryers	
D1: Semi-professional dryer, condenser	3 350
D2: Semi-professional dryer, air vented	4 500
D3: Professional cabinet dryer	11 100
D4: Professional tumble dryer, <15 kg	16 800
D5: Professional tumble dryer, 15-40 kg	3 700
D6: Professional tumble dryer, >40 kg	300
D7: Pass-through (transfer) tumble dryer	1 200
Total dryers	40 950
Total laundry appliances	122 500

Average product lifetimes updated (see also Task 3)

Type of appliance	Design lifetime
Laundry machines	
WM1: Semi-professional washer extractor	15 000 cycles
WM2: Professional washer extractor, <15 kg	30 000 cycles
WM3: Professional washer extractor, 15-40 kg	
WM4 : Professional washer extractor, >40 kg	
WM5 : Professional washer dryer	20 000 cycles
WM6 : Professional barrier washer	30 000 cycles
WM7 : Washing tunnel machine	40 000 hours
Dryers	
D1: Semi-professional dryer, condenser	15 000 cycles
D2: Semi-professional dryer, air vented	
D3: Professional cabinet dryer	
D4: Professional tumble dryer, <15 kg	30 000 cycles
D5: Professional tumble dryer, 15-40 kg	
D6: Professional tumble dryer, >40 kg	
D7: Pass-through (transfer) tumble dryer	40 000 hours

Ranges of prices updated:

Type of appliance	Typical price range (Euro)
Laundry machines	
WM1: Semi-professional washer extractor	1 000 – 5 500
WM2: Professional washer extractor, <15 kg	5 000 – 35 000
WM3: Professional washer extractor, 15–40 kg	
WM4: Professional washer extractor, >40 kg	50 000 – 170 000
WM5: Professional washer dryer	n.a.
WM6: Professional barrier washer	15 000 – 120 000
WM7: Washing tunnel machine	280 000 – 500 000

Type of appliance	Typical price range (Euro)
Dryers	
D1: Semi-professional dryer, condenser	800 – 3 500
D2: Semi-professional dryer, air vented	
D3: Professional cabinet dryer	3 500 – 20 000
D4: Professional tumble dryer, <15 kg	
D5: Professional tumble dryer, 15-40 kg	
D6: Professional tumble dryer, >40 kg	18 000 – 35 000
D7: Pass-through (transfer) tumble dryer	40 000 – 110 000

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- Average detergent and rinsing aid prices still assumed at **2€/kg**
 - Installation costs: 9% of the purchase price for WM 7 and D 7 and 4% for all other categories
 - Repair and maintenance costs: 3% for all categories.

Thanks for your attention!

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