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Odyssee



Short term indicators facility

Methodological report

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Short-term indicators facility: overview

- The objective is to provide estimate of ODEX and energy savings to year t-1 by mid year t (i.e. 2013 by mid year 2014) , i.e. before the disaggregated data necessary for their calculation are available;
- The role of national teams is to well update the necessary data by mid year ; data clearly marked in the data sheet.
- The output for the user is an estimate of ODEX and energy savings at year t-1 in the Excel data sheet; the calculation is directly included in the data sheet → the data tool will not be made public;
- Design of all calculations adapted to countries data availability ready; calculation operational for a few countries and to be finalised for all countries by end of January 2014 ;

Methodology

- In the methodology proposed by ECN, aggregate indicators of unit consumption or intensities were used as proxy to extrapolate the ODEX variation by sector;
- Enerdata has developed an alternative methodology to rely on less aggregate indicators, by calculating the ODEX, as in a normal year, from extrapolated data and indicators needed for calculating the ODEX → **reference approach**
- For countries with less updated data, **alternative simplified approaches** have been proposed to address different types of data availability (some close to ECN approach).

Short-term indicators facility: new calculation sheet

- Calculation directly made a separate Excel sheet with direct links to the data provided by NT with different options;
- Summary table on top with all data requested for the calculation;
- Organization and qualification of data according to the option of calculation: simplified approach (mandatory) or reference.

Requested data by sector : data for 2010-2011 correspond to data available in the ODYSSEE database; 2012 should be estimated with

	2010	2011	2012	
Households				
Energy consumption of households	306	271	290	Mandatory
Electricity consumption of households	72,3	69,1	71	Mandatory
degree day	3000	2532	2725	Mandatory
average degree days	2864	2864	2864	Mandatory
Number of households	207031	207513	208158	Mandatory
Population	501085	502369	503930	Mandatory
Industry				
Total energy consumption	289,6	287,1	283	Mandatory
Production index chemicals	100	102	100	Mandatory
Production index primary metals	100	104	98	Mandatory
Physical production of steel (kt)	172632	177427	168317	Mandatory
Production index non metallic	100	103	94	Mandatory
Physical production of cement	100000	100000	100000	Mandatory
Transport				
Total energy consumption	365,1	364,1	360	Mandatory
of which air	49,3	50,5	50	Mandatory
of which road	299,7	297,6	295	Mandatory
of which gasoline	92,1	88,4	83	Recommended
of which diesel	187,8	188,6	191	Recommended

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Industry : methodology

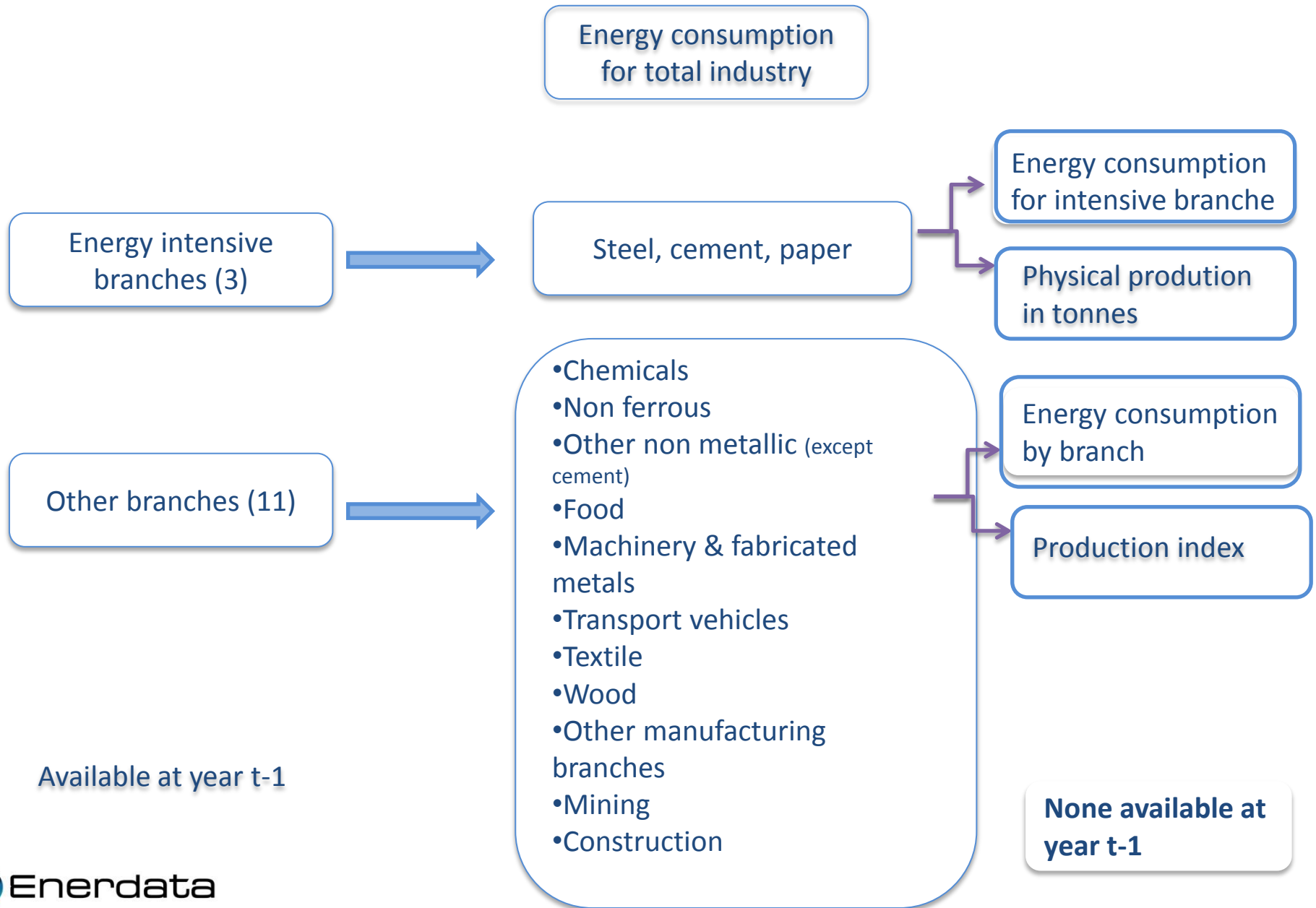
- **Reference approach** (for most countries):
 - Principle:
 - Energy consumption by branch for year t-1 estimated from the index of production by branch t-1 and the total industry consumption at t-1
 - ODEX calculated for t-1 as for the other years
 - Data updating required to t-1 :
 - ✓ Total energy consumption of industry
 - ✓ IPI by branch and physical production

- **Simplified approach** (for countries with no detailed updating):
 - Principle: ODEX updated directly from the energy consumption per unit of Industrial Production Index (IPI); (IPI preferred to the value added as updated faster).
 - Data updating required to t-1 requirements :
 - ✓ Total energy consumption of industry
 - ✓ Total IPI of industry

Reference methodology for industry: direct calculation of ODEX from estimated data ⁽¹⁾

- As energy consumption by branch is not available at year t-1 (e.g. 2012), they will be extrapolated from data usually available at t-1:
 - Total energy consumption of industry (energy balances) (2012 available in summer 2013)
 - Production index by branch : annual data or monthly data (eg Eurostat : 2012 annual data available, 2013 data available until M03)
 - Physical production for energy intensive branches (steel, cement, paper):2012 : available in international statistics (World Steel, Cembureau, FAO.)
- The estimation of energy consumption by branch at year t-1 will be done by assuming for each branch the same variation of intensity as the industry total and applying the actual change in activity measured with IPI or production.

Calculation of ODEX in industry: reminder



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Transport methodology (1/3)

■ Reference approach :

- Principle : calculate the ODEX from year (t-1) as for a normal year based of the consumption by type of vehicle estimated from the specific consumption per car- equivalent at t-1 and vehicle stock at year t-1
- Data required to t-1:
 - ✓ total consumption of transport by mode (road, rail , air and water) (from energy balance)
 - ✓ stock of vehicles by fuel
 - ✓ traffic (trucks, air) ;
- Indicators extrapolated to t-1
 - ✓ Cars ; l/100 km (for t-2, trend to estimate the value)
 - ✓ Trucks and light vehicles, bus: koe per unit of traffic (energy consumption based on consumption per car-equivalent, traffic estimated or known)
 - ✓ Rail, inland waterways, air: koe per unit of traffic ; energy consumption known (energy balances); traffic estimated or known);

Transport methodology (2/3)

▪ Alternative approach to reference

- Principles : calculate the energy savings as the difference between the actual variation of energy consumption and the variation due to traffic variation ; this activity effect being calculated from the variation of passenger and freight traffic by mode
- Data updating required to t-1:
 - ✓ total consumption of transport by mode (road, rail , air and water)
 - ✓ traffic by mode in tkm and pkm ;

Transport methodology (3/3)

▪ Simplified approach :

- **Principle** : calculation of energy savings for road transport and air
- For road based on energy consumption of road and a fictive stock of vehicles (measured in car-equivalent)
- For air on total consumption and air traffic

- Data updating required to $t-1$:
 - ✓ Road energy consumption
 - ✓ Stock of vehicles

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Methodology for the household sector

■ Reference approach :

- As technical ODEX (which is always used) is rather linear and constant over time; results for 2012 can be extrapolated using a trend (over the 5 last years);

■Simplified approach :

- Principles : calculation of the energy savings as the difference between the actual variation of non electric consumption at normal climate*, used as proxy for thermal uses, and the variation due to increase in the number of dwellings;
- Data updating required to t-1:
 - ✓ Household energy consumption: total and electricity (from energy balance) ;
 - ✓ Number of occupied dwellings or households;
 - ✓ Number of degree days) (national sources or Eurostat);

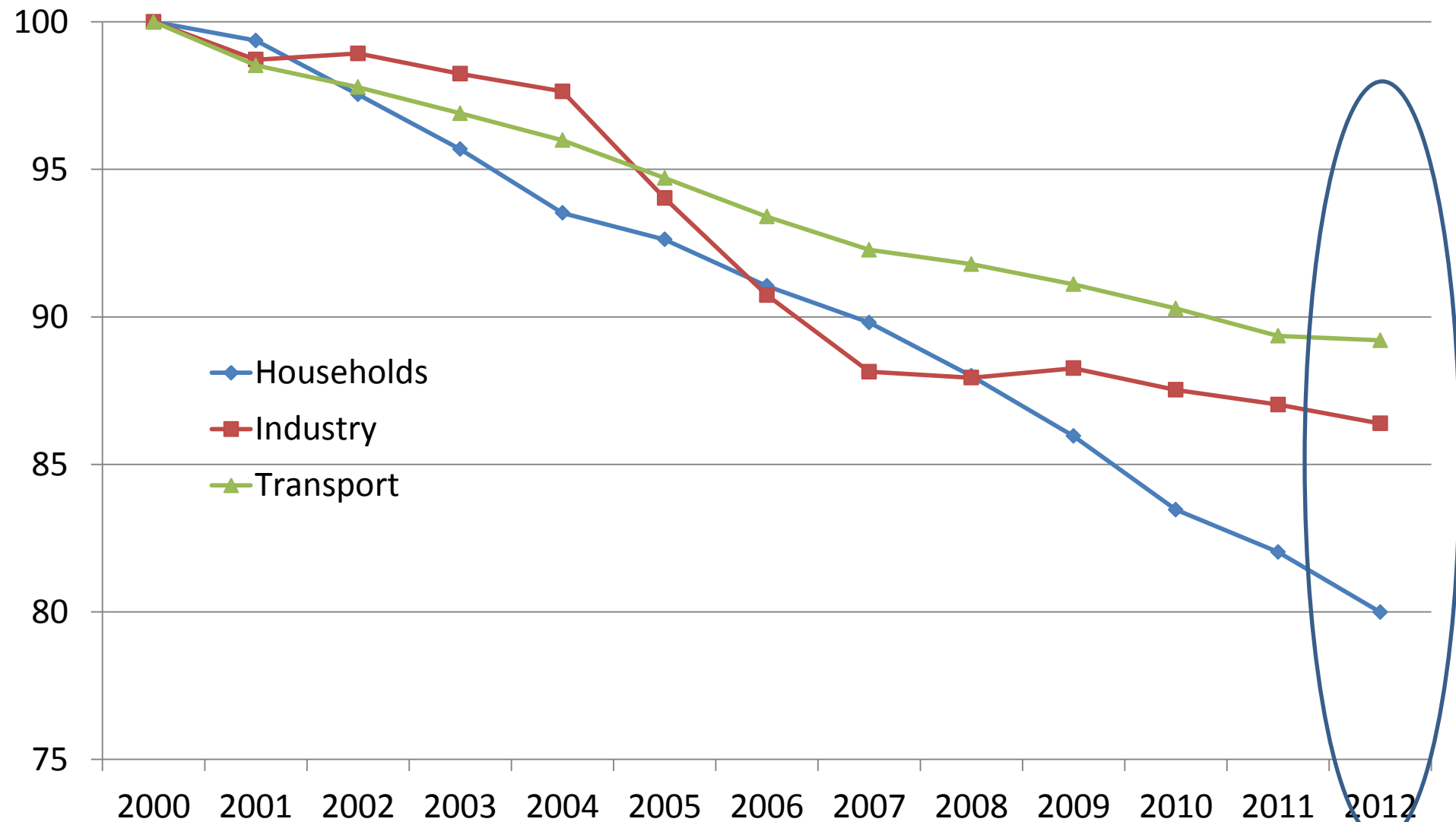
**for countries with significant electric heating, such as France or Norway, electricity for heating estimated and added to non electric consumption*

Methodology for the service sectors

■ Reference approach :

- Principles : calculate the energy savings as the difference between the actual variation of non electric consumption *, used as proxy for thermal uses, and the variation due to increase in the number of employees;
- Data updating required to t-1:
 - ✓ Service sector energy consumption: total and electricity
 - ✓ Employment in services;
 - ✓ Number of degree days;

ODEX for EU (as a whole)



For any question:

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