

# Functional Documentation - IMEP

## 1.0 Overview

### Business Context and Application Overview

The IMEP (Integrated Manufacturing & Energy Performance) application is under the finance domain using data from SAP CO (Controlling) to provide to the business the possibility to analyze the production's target cost, actual cost, the variance for each cost item in process order and the cost collector.

### Application User Profile

For this Application the access is provided based on the BW menu "IMEP - Integrated Manufacturing & Energy Performance" and it's done via Service one.

Fill the form

<https://solvay-dwp.onbmc.com/dwp/app#/itemprofile/622>

In SAP system select the "WBP - BW Business Warehouse"

In WBP - BW Business Warehouse : Select the Business Role select the "IMEP - Integrated Manufacturing & Energy Performance"

#### Target Users:

GBU Controllers, Site Controllers, Plant Management and Industrial & Strategy RD&T.

VERSION	DATE	MODIFIED BY	DESCRIPTION
0.01	09.10.2023	Inês Vilarés	Initial draft

### Application Type

#### Data Product Type

- Dashboard
- Report
- Advanced analytics
- AI
- Others <specify which one>

#### Technologies

- BW
- Tableau
- QlikSense
- Talend
- Dataiku
- Others <specify which one>

#### Data Sources

*Note: list of all applications and various environment*

- SAP PF1 (Production environment)
- SAP WP1
- SAP PI1
- iCare CRM
- CORE CRM
- Budget (Excel)
- Others <specify the name of the source>

## 2.0 Business Process

To understand better the main goal for the IMEP application it's necessary to know some concepts from the SAP CO module for the product costs.

Below you can see that for each system we have main differences coming from Costing Methodology:

WP1	PF1
<p><b>Actual production costs</b> = Actual quantities at standard costs</p> <p><b>Specific characteristics</b></p> <ul style="list-style-type: none"> <li>- Value Streams</li> <li>- LIP00 &amp; LIP01</li> <li>- Origin Group = Component/ Produced Material grouping</li> <li>- ZCBS Hierarchy for Cost Center/Activity</li> </ul>	<p><b>Actual production costs</b> = Material Ledger</p> <p><b>Specific characteristics</b></p> <ul style="list-style-type: none"> <li>- PIF</li> <li>- Material group</li> <li>- Cost object</li> <li>- Origin Group</li> <li>- XCS-ALL Hierarchy</li> </ul>

The valuation in solvay it's done once a month.

For PF1 logic we have the following process:

### Product Costing

The flow of the product costing is composed of a series of standard transactions which are interconnected. This requires the processing in a certain sequence. The procedure starts in the cost center accounting referring to so-called production cost centers. Defined activity types are assigned to these cost centers. For the daily movements the activity prices are valued at standard cost. In the closing of the product costing they will be revaluated at actual prices. The differences are credited on the production cost centers and debited on the production cost collectors, managed in the cost object hierarchy.

The procedure continues with the distribution of postings of actual costs on the cost object level to the assigned cost collectors.

All categories of variances between target costs and actual costs, like price and quantity variances in raw and packaging materials, same for consumed activities are calculated within the cost object hierarchy and posted on cost collectors. As the cost collectors are a certain kind of order, they must be settled at the end of the period.

Intermediate checks take place in order to look at the 'zero' balance of the cost accounting objects involved.

### Material Ledger

To execute the Material Ledger it's necessary that the Product Costing was successfully completed.

After that it is necessary to run Material Ledger, in order to correct the standard price, calculating an actual price for each material, based on all the actual costs for that specific period. This actual price is called "periodic price unit" and can be used to revalue the material stock for the mentioned period.

Actual Costing - determines what portion of the variance is to be debited to the next highest level using material consumption. With the actual BOM, variances can be rolled-up over multiple production levels all the way to the finished products.

Material Ledger is activated at company level but its use can be limited by plant or by article. So, if one plant is customized with ML, all the articles in this plant will have material ledger postings but with a different importance depending if the article is included in the end of the month procedure or not.

After the run of Material Ledger, all the inventory stocks are revaluated at actual prices and actual production cost of the period.


In this way, for PF1 we use the Material Ledger to calculate the actual costs, that means each entry in stock of a produced material it will be done at the actual costs. In the end of the month they will reassign the difference between the standard cost and the actual cost and to have the stock with the actual cost. In this case the difference is allocated to the product and not in P&L as in WP1.



For WP1 each month we reevaluate the standard price of the products and independent of the actual costs of the month, the valuation in stock for the products will be done with the standard price so it will exist a variance and this difference will be posted in a dedicated line in P&L.

To see more detail information about the processes please check in the wiki page for "[Costing - Knowledge Base](#)".

**SAP Transaction Material master data:** MM03 in Accounting1 and Costing 2 page.

# 3.0 Application Feature Overview

For this application find below all the workbooks available (the most used workbooks are identified by the symbol ):

Reports	Definition	Prompts	BW Workbook Query	Query Technical Name
<p> <b>BW - IMEP - WP1</b>  <b>Manuf. Local Database</b>  <b>(Core Workbook)</b></p>	<p>It gives a transversal and consolidated view of manufacturing costs (from sites to GBU level) for all plants managed in <b>WP1</b> .</p>	<p>Mandatory:</p> <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> <p>Optional:</p> <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Curr. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• UoM for Qty in Al conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Index 1;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	<p>BW_WBK_CO_0019</p>	<p>BW_QRY_MV COPP01_0009</p>
<p> <b>BW - IMEP - PF1 Manuf.</b>  <b>Local database (Core Workbook)</b></p>	<p>It gives a transversal and consolidated view of manufacturing costs (from sites to GBU level) for all plants managed in <b>PF1</b> .</p>	<p>Mandatory:</p> <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> <p>Optional:</p> <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Curr. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• UoM for Qty in Al conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Cost Object;</li> <li>• Index 1;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	<p>BW_WBK_CO_0021</p>	<p>BW_QRY_MV COPP01_0011</p>

<b>BW - IMEP - PF1 Check of data consistency (Core Workbook)</b>	<p>The workbook is used to validate the quality of the data reported in imep for the sites in PF1.</p>	<p>Mandatory:</p> <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> <p>Optional:</p> <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Currn. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Cost Object;</li> <li>• Index 1;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	BW_WBK_CO_0024	BW_QRY_MV COPP01_0013
<b>BW - IMEP - PF1 ML synthesis (Core Workbook)</b>	<p>This report answers a specific need of GBUs operating in PF1 who wants to better understand the impact of the stock effects in their P&amp;L. It can be used as the report <a href="#">Z1K_CONS_ESTO</a> in PF1 but for a wider scope.</p>	<p>Mandatory:</p> <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> <p>Optional:</p> <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Currn. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Object;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	BW_WBK_CO_0026	BW_QRY_MV COPP01_0018
<b>BW - IMEP - PF1 Prod. Cost Center Actual Postings (Core Workbook)</b>	<p>It is cost center report that can be used to detail the <a href="#">Index 1 = 9</a>. It is mainly used to provide the detailed utilities costs that are posted in dedicated cost centers with dedicated Statistical Key figure.</p>	<p>Mandatory:</p> <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> <p>Optional:</p> <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Currn. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• BFC Activity 1;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	BW_WBK_CO_0025	BW_QRY_MV COPP01_0016

<b>BW - IMEP - PF1 Prod. Costs by Cost Objects (Core Workbook)</b>	This workbook is the same as the workbook BW_WBK_CO_0021 IMEP - PF1 Manuf. Local database (Core Workbook) with a different lay-out.	Mandatory: <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> Optional: <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Target Curr. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• UoM for Qty in Al conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Cost Object;</li> <li>• Index 1;</li> <li>• Material;</li> <li>• Plant.</li> </ul>	BW_WBK_CO_0029	BW_QRY_MV COPP01_0011
<b>BW - IMEP - PF1 Uploaded budget data check (Core Workbook)</b>	This report used to control the budget that was uploaded using the transaction ZIMEP_FILE.	Mandatory: <ul style="list-style-type: none"> <li>• Period /Fiscal Year.</li> </ul> Optional: <ul style="list-style-type: none"> <li>• Auth Scope on Plant;</li> <li>• Version;</li> <li>• Target Curr. for conversion;</li> <li>• UoM for Qty conv.;</li> <li>• BFC GBU;</li> <li>• Company Code;</li> <li>• Cost Center;</li> <li>• Cost Object;</li> <li>• Index 1;</li> <li>• Plant.</li> </ul>	BW_WBK_CO_0023	BW_QRY_MV COPP01_0012

## 4.0 Functional Specification

### 4.1 General Data/Calculations

For these reports, it's important to understand some general concepts which are transversal to all the reports which allows the users to work with the reports.

<b>Standard Cost</b>	Refers to a predetermined, fixed cost that a company assigns to its products, materials, or services for the purpose of internal cost accounting and cost control. It serves as a benchmark or baseline cost against which actual costs are compared. The key elements of a standard cost include labor, material, and overhead costs.
<b>Costing Lote size</b>	For a material we have in the master data the definition for the costing lote size and we can have 1 unit or 100 units and for the value of the stock this will be used with the price defined.
<b>Cost Object</b>	in PF1 it's a grouping of material which doesn't exist in WP1.
<b>Index</b>	Is a key element to understand to set-up an accurate report to follow production quantities and costs. More detail information in the Process Detail section.

### 4.2 Process Detail

### 4.2.1. Report/Process Definition

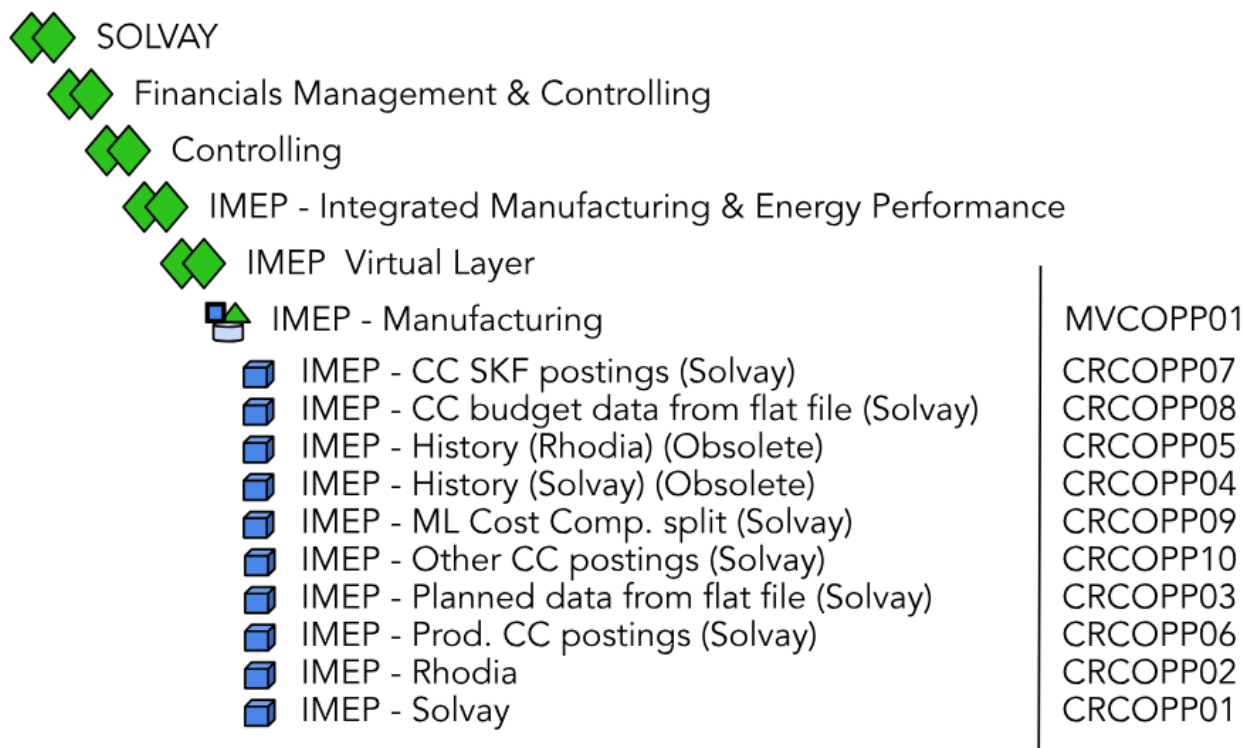
<b>Domain</b>	Finance
<b>Application</b>	BW reports under IMEP - Integrated Manufacturing & energy Performance folder
<b>Provider</b>	MVCOPP01

iMEP is a transversal and consolidated view of manufacturing costs from sites to GBU level. We have data from PF1, WP1 and some information from SodaAsh for the budget data (this is a specific case).

In this section we will approach:

- [SAP BW High Level View](#)
- [IMEP - Characteristics](#)
- [Index 1](#)
- [Workbook Details](#)
  - [BW - IMEP - WP1 Manuf. Local Database \(Core Workbook\)](#)
  - [BW - IMEP - PF1 Manuf. Local database \(Core Workbook\)](#)
  - [BW - IMEP - PF1 Check of data consistency \(Core Workbook\)](#)
  - [BW - IMEP - PF1 ML synthesis \(Core Workbook\)](#)

### SAP BW High Level View



### IMEP - Characteristics

You can find below the list of all [characteristics](#) and some [measures](#) available in iMEP workbooks.

Type in your keywords in the field "Text search"

### Index 1



In the application iMEP, the characteristic **Index 1** is a key element to understand to set-up an accurate report to follow production quantities and costs.

For historical reasons, the data structure is not the same in our two source systems (WP1 & PF1). It explains why some indexes only exist in one of the two ERPs.

Code	Description	Definition	WP1	PF1
1	Produced material	Costs and quantities at finished product level	✓	✓
2	Co-product	Co-product	✓	✓
3	BOM component	Costs and quantities issued from component consumption	✓	✓
4	Subcontracting	Subcontracting costs	✓	✓
5	Activity type	Costs and quantities issued from activity consumption at standard costs	✓	✓
6	Settlement	Process Orders variances	✓	✗
7	Cost Collector Varia	Allocation of activity variances done by Material Ledger	✗	✓
9	SKF/direct Posting	Detailed origin of costs consumed on production cost centers by Activities	✗	✓

## iMEP Basics – Index 1



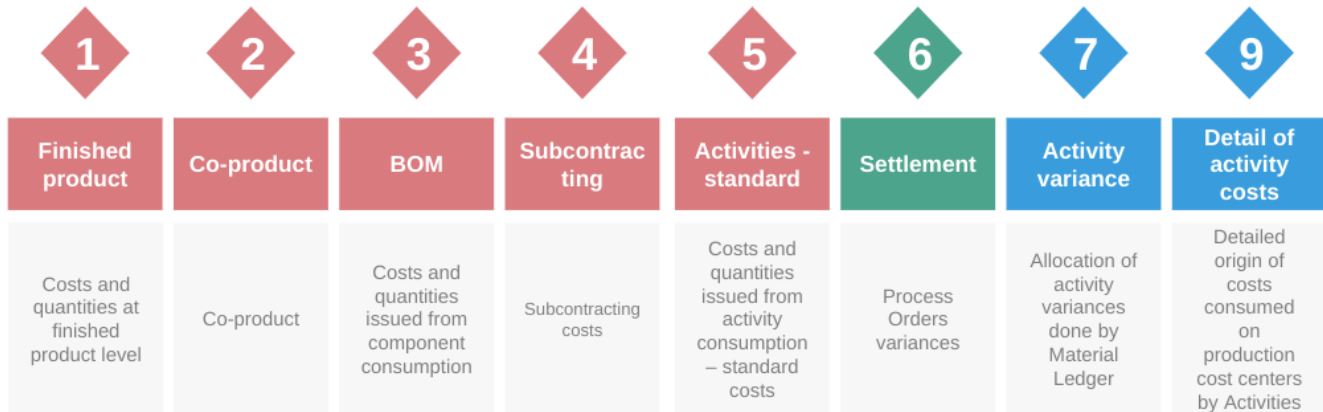
PF1 & WP1



Only in WP1



Only in PF1



### Example PF1

The aim is to have the detailed quantities and costs of production of the material 157142 in iMEP

There are 4 columns in the report:

1. Finished product code:
2. Index 1
3. Actual quantities
4. Mat. Ledger Costs = Actual costs

Material		Index 1		Actual Qty	Mat. Ledger Costs
157142	SD CS1250 4SMVSH	a 1	Produced material	-70,000 KG	-6,840
		b 3	BOM component	206,000 KG	2,650
		c 5	Activity type		4,440
		d 7	Cost Collector Varia		-250
		e 9	SKF/direct Posting		4,190

The detail of costs & quantities is:

	Index 1	
a	1 - Produced material	70 000 KG of the finished product 157142 SD are produced and the total production cost is 6 840 €
b	3 - BOM component	206 000 KG of Raw Materials are used for the production of the finished product with a total cost of 2 650 €
c	5 - Activity type	The cost of activities used for the production is 4 440 €. It is based on the estimated costs of activities
d	7 - Cost Collector Varia	It is the difference between the standard cost of activities and actual costs (=4 190 € - 4 440 €)
e	9 - SKF/direct Posting	It is the detail of activity costs

- The cost of production (a) = cost of raw materials (b) + cost of activities (standard (c) & variance(d)) = 6 840 € = 2 650 € + 4 440 € - 250 €
- Index 1 = 9 (e) is the detail of activity costs. It is equal to Index 1 = 5 (c) and Index 1 = 7 (d) => 4 440 € - 250 € = 4 190 €

### Control data accuracy

The workbook BW\_WBK\_CO\_0024 is used to perform some consistency checks.

### Example WP1

The aim is to have the detailed quantities and costs of production of the material 157142 in iMEP

There are 4 columns in the report:

1. Finished product code:
2. Index 1
3. Actual quantities
4. Actual Costs

Material		Index 1	Actual Qty	Actual Costs	EUR	
\$1016	SOD SILICAT	a	1	Produced material	-35,000 TO	-2,700,000.00
		b	3	BOM component	10,500 TO	2,300,000.00
		c	5	Activity type		350,000.00
		d	6	Settlement		50,000

The detail of costs & quantities is:

	Index 1	
a	1 - Produced material	35 000 TO of the finished product 81016 SOD are produced and the total production cost is 2 700 k€
b	3 - BOM component	10 500 TO of Raw Materials are used for the production of the finished product with a total cost of 2 300 k€
c	5 - Activity type	The cost of activities used for the production is 350 k€.
d	6 - Settlement	It is the production variance. The amount is settled to the P&L to the value field D05/E05/F05

- The cost of production (a) = cost of raw materials (b) + cost of activities (c) + variance (d) = 2 700 k€ = 2 300 k€ + 350 € + 50 k€

## Workbook Details

### Access the workbook


[blocked URL](#)

=> Go to Analysis for Office in excel

=> Click "Open Data Source"

Go to the tab "Role" and open the folder iMEP - Integrated Manufacturing & Energy Performance => Manufacturing and Double-click on the workbook **which the user will use** to open it.

## BW - iMEP - WP1 Manuf. Local Database (Core Workbook)

 This workbook gives a transversal and consolidated view of manufacturing costs (from sites to GBU level) for all plants managed in **WP1** .

### Open the workbook (BW\_WBK\_CO\_0019)

It is mandatory to enter the period (1) : MMM.YYYY

It is also recommended to enter at least a GBU (6), a company code (7) or a plant code (11)

It is also possible to enter:

- a target currency (3) to have all values converted with the same currency
- a Unit of Measure for the quantity conversion (ex: TO for Tons) (4)
- a Unit of Measure for Active ingredients (5)
- a Cost center (8)
- an **Index 1** (9)
- a material code (10)

Click "OK"

**[BW\_QRY\_MVCO001\_0009] IMEP - WP1 Manuf. Local Report (Core Query)**

Auth Scope on Plant (Auth with input) =  1

\* Period/Fiscal Year (Selection Option, Mandatory) =  2

Target Curr. for conversion (Single value, Optional) =  3

UoM for Qty conv. (Single value, Optional) =  4

UoM for Qty in AI conv. (Single value, Optional) =  5

BFC GBU (Selection Option, Optional) =  6

Company Code (Selection Option, Optional, Auth) =  7

Cost Center (Selection Option, Optional) =  8

Index 1 (Selection Option, Optional) =  9

Material (Selection Option, Optional) =  10

Plant (Selection Option, Optional) =  11

OK Annuler

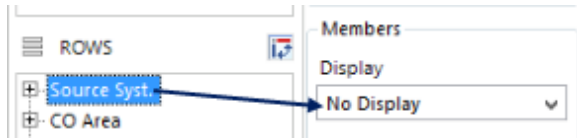
## How to understand the report

By default there are 11 columns in the report:

1. The source system = WP1\_400 ★
2. The **Controlling Area** ★
3. The production plant
4. The material = The finished product
5. The **Index 1**
6. The Origin
7. The Actual quantity produced
8. The Actual costs of production split by
  - Actual Variable costs (9)
  - Actual Fixed costs (10)
  - Actual Depreciation (11)

Source Sys	CO Area	Plant	Material	Index 1	Origin	Actual Qty	Actual Costs	Actual Costs (V)	Actual Costs (F)	Actual Costs (D)
WP1_400	0001	0087	11830	1	ZEOSIL 1165MP BULK	-2 763 TO	-1 513 312,29			
				2	ZEOSIL 1165MP BULK	-49 TO	-492,40			
				3	ZEOSIL 1165MP BULK	11 533 TO	824 265,21			
				5	ZEOSIL 1165MP BULK		688 054,53			
				6	ZEOSIL 1165MP BULK		1 484,95			
				Result						

★ It is recommended to keep these columns in your report to avoid that all master data start with "WP1\_400/" or "Z006/" but you can hide them in the design panel. Click on the dimension you want to hide and select "No display"



In this example the material 11830 ZEOSIL 1165MP BULK was produced during the period in plant 0087:

1. 2 763 Tons were produced and the total production costs is 1 513 312,29 EUR
2. 49 Tons of co-products were also produced and the total production costs is 492,40 EUR
3. The production of the finished product & the co-product was done with 11 533 Tons of Raw materials. And the total cost of these raw materials was 824 265,21 EUR
4. Activities (Labour, energy, fixed costs) were also allocated to the production costs of these products with a total costs of 688 054,53 EUR
5. The variance between actual production costs & standard costs (=process order variance) is 1 484,95 EUR
6. The total should be zero as the total production costs (Index 1 = 1 & 2) corresponds to the cost of raw material & activities + variances (Index 1 = 3, 5 & 6)

Plant	Material	Index 1	Actual Qty	Actual Costs
0087	11830	ZEOSIL 1165MP BULK	-2 763 TO	-1 513 312,29
			-49 TO	-492,40
			11 533 TO	824 265,21
			*	688 054,53
			*	1 484,95
			*	

## Set-up a detailed report

when you have a good understanding of the report, you can add additional information in the report. You can refer to the list IMEP - Characteristics to have a definition of each dimension available in iMEP reports.

For instance add:

1. the field "Origin" to have additional details by raw material & activity
2. the measures "Actual Costs VC", "Actual Costs FX" & "Actual Costs DP" (c) to have the split of costs by variables costs, fixed costs and depreciation

=> You can also add the QUR, QUS, CUR, CUS (actual and standard unit quantity & cost)

Material	Index 1	Origin	Actual Qty	Actual Costs	Actual Costs VC	Actual Costs FX	Actual Costs DP
15930 ZEOBEL 1188PP BULK	1	11830 ZEOBEL 1188PP BULK	-2 763 TO	-1 513 312,29	-534 157,35	-614 791,18	-164 363,75
	2	08971 ZEOBEL 1188PP BB PEICE 700	7 TO	27,60			
	3	11830 ZEOBEL 700 KG KID / FAL	1 TO	2 763,42			
	4	08971 ZEOBEL 1188PP BB 700 KID / WOOD	97 TO	28 850,47			
	5	07984 ZEOBEL 1188PP BB 700 KG KID / WOOD	184 TO	82 374,61	60 500,71	21 444,93	2 209,23
	6	01130 MOD. SULFATE 100, 260MS	10 228 TO	625 579,49	466 165,21	159 841,40	48 569,82
	7	01463 SULFURIC ACID 98% BULK	1 942 TO	49 494,80	49 494,80		
	8	01682 ZEOBEL ALUMINATE BULK	48 TO	15 515,70	15 515,70		
	9	01302 ZEOBEL 145L BB 700 KG / FAL	9 TO	9 484,84	1 560,54	1 385,39	148,91
	10	0087-1001 GAS	522 KWH	122 450,38	122 450,38		
	11	0050-1005 BLOC	LVV Electricity / CABLE Electricity	34 533 kWh	39 356,71	39 356,71	
	12	0087-1003 STEAM	LVV Steam / Steam	1 305 TO	22 386,62	22 386,62	
	13	0050-1004 WASTE	LVV Industrial water / Industrial water	28 298 M3	21 233,54	21 233,54	
	14	0050-1005 UTIL	LVV Other utilities / UTILITE	39 531 AU	52 575,84	52 575,84	
	15	0050-1004 WASTE	LVV Emptins & waste / WASTE	47 427 TO	47 426,84	47 426,84	
	16	0050-1004 WASTE	LVV Treated water / water	2 289 M3	3 399,66	3 399,66	
	17	0050-1004 STRAIT	LVV Cracking CP / Talling (per Tonne)	128 TO	2 877,50	2 877,50	
	18	0050-1004 WASTE	LVV Sludge / DIRECT DEP	554,820 H	103 276,38		188 834,29
	19	0050-1005 MACH	LVV Sludge / Machine hour	554,820 H	188 814,29		188 834,29
	20	0087-1000 MANHO	LVV Sludge / Direct Labour hours	554,820 H	84 511,93		84 511,93
	21	0087-1000 MANHO	LVV Sludge / Direct Labour hours		1 844,95		

## BW - IMEP - PF1 Manuf. Local database (Core Workbook)

This workbook gives a transversal and consolidated view of manufacturing costs (from sites to GBU level) for all plants managed in PF1 .

## Open the workbook (BW\_WBK\_CO\_0021)

It is mandatory to enter the period (1) : MMM.YYYY

It is also recommended to enter at least a GBU (5), a company code (6) or a plant code (11)

It is also possible to enter:

- a target currency (2) to have all values converted with the same currency
- a Unit of Measure for the quantity conversion (ex: TO for Tons) (3)
- a Unit of Measure for Active ingredients (4)
- a Cost center (7)
- a Cost object (8)
- an Index 1 (9)
- a material code (10)

Click "OK"

## Set-up a basic report

When you start working with iMEP, you can simplify the lay-out that is proposed by default.

1. Click the button "display" to show the "Design Panel"
2. Remove "CE Grp XCS-ALL Lev2", Cost Element, Origin from the report. (drag this values from the box "Rows")
3. You can also hide the value "Source Syst." & "CO Area" (Click the dimension and select "no display")

There are 6 columns in the report:

1. The plant code
2. The code of the material produced and its description
3. The Index 1
4. The actual quantity
5. The actual costs

Plant	Material	Index 1	Actual Qty	Mat. Ledger Costs
TOSA	157142	SD CS1250 4SMVSH	1	EUR
				-49,210 TO
				-5,091,065.04
				-2 919,39
				-26 710 M3
				-2 919,05
				-2 977,61
				-40,942,28
				402,435,33
				402,435,28
				Result
				402,435,28

## How to understand the report

In this example the material 157142 SD CS1250 4SMVSH was produced during the period in plant TOSA:

- 49 210 Tons were produced and the total production costs is 5 091 065,04 EUR
- 26 710 M3 of co-products were also produced and the total production costs is 7 919,39 EUR
- The production of the finished product & the co-product was done with 49 210 Tons of Raw materials. And the total cost of these raw materials was 4 696 549,05 EUR
- Activities (Labour, energy, fixed costs) were also allocated to the production costs of these products with a total costs of 443 377,61 EUR (Standard costs) - 40 942,28 EUR (Variances) = 402 435,33 EUR
- Detailed of costs posted on cost centers = 402 435,33 EUR. It provides the detail of the activities costs and the total amount is the same as (4).
- The total should be zero as the total production costs corresponds to the cost of raw material & activities. However in this example the cost of activities is double-counted (4) & (5). It is recommended to exclude the **Index 1 = 9** of your reports except if you have a specific need.

Plant	Material		Actual Qty	Mat. Ledger Costs	
		Index 1		EUR	
TOSA	157142	SD CS1250 4SMVSH	1	-49,210 TO	-5,091,065.04
			2	-26,710 M3	-7,919.39
			3	49,210 TO	4,696,549.05
			5	147,629 TO	443,377.61
			7		-40,942.28
			9	*	402,435.33
			Result	*	402,435.28

**i** When you exclude the **Index 1 = 9** of your report then the total Mat. Ledger Costs by material code is close to zero.

=> You can use the workbook **IMEP - PF1 Check of data consistency** to validate that it is true for all the materials of a plant, company or GBU.

Plant	Material		Actual Qty	Mat. Ledger Costs	
		Index 1		EUR	
TOSA	157142	SD CS1250 4SMVSH	1	-49,210 TO	-5,091,065.04
			2	-26,710 M3	-7,919.39
			3	49,210 TO	4,696,549.05
			5	147,629 TO	443,377.61
			7		-40,942.28
			Result		-0.05

## Set-up a detailed report

when you have a good understanding of the report, you can add additional information in the report. You can refer to the list **IMEP - Characteristics** to have a definition of each dimension available in IMEP reports.

For instance you can add:

- the field "Origin" to have additional details by raw material & activities
- the measures "ML VC", "ML FX" & "ML DP" to have the split of costs by variables costs, fixed costs and depreciation

=> You can also add the QUR, QUS, CUR, CUS (actual and standard unit quantity & cost)

Plant	Material	Index 1	Origin	Actual Qty	Mat. Ledger Costs	ML VC	ML FX	ML DP	
TOSA	157142	SD CS1250 4SMVSH	1	SD	49,210 TO	5,091,065.04	-2,403,333.04	-1,513.81	788,348.17
			2	CONDENSED WATER	26,710 M3	-7,919.39	-7,919.39		
			3	BL	49,210 TO	4,696,549.05	2,382,663.23	1,724,533.05	689,862.77
			5	ST2411900 Z22PR	49,210 TO	47,909.11			67,909.11
			7	ST2411900 Z22PR	49,210 TO	239,159.18			239,159.18
			9	ST2411900 Z22PR	49,210 TO	136,310.32			136,310.32
			7	ST2411900 Z22PR		1,476.29			1,476.29
			9	ST2411900 Z22PR		-34,397.43			-34,397.43
			7	ST2411900 Z22PR		-8,021.14			-8,021.14
			Result		-1	-8.05	-8.05	-8.03	

## BW - IMEP - PF1 Check of data consistency (Core Workbook)

**i** The aim of this workbook is to validate the quality of the data reported in imep for the sites in PF1.

It can be used when you start working with iMEP queries and confirm that there is no specificity in your production site / GBU that is not taken into account in the imep program.

## Open the workbook (BW\_WBK\_CO\_0024)

It is mandatory to enter the period (2) : MMM.YYYY

It is also recommended to enter at least a company code (6) or a plant code (11)

It is also possible to enter:

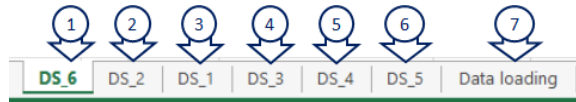
- a target currency (3) however it is recommended to perform the test with the local currency
- a Unit of Measure for the quantity conversion (ex: TO for Tons) (4)
- a GBU (5)
- a Cost object (8)
- an **Index 1** (9)

- a material code (10)

Click "OK"

## The workbook in detail

There are 7 sheets in the workbook:



### 1. DS\_6

The aim of the report iMEP is to provide a detail of actual production costs by material/plant. In PF1, the actual production costs by material is calculated with Material Ledger and the total by material/plant can be displayed with the transaction CKM3 - Material Price Analysis.

The purpose of the control (DS\_6) is to compare the calculation done by Material Ledger (3) and the one done in iMEP (2) material code by material code (1)

Ex: The actual production costs calculated with Material Ledger (3) gives the same result as iMEP (2). It confirms that the report iMEP is accurate.

iMEP Index1-1 Mat. Ledger Costs vs ML Production costs							
Source Sgst.	CD Area	Cost Object	Plant	Material	Mat. Ledger Costs	ML Prod. Costs	
PF1_020	CHEF	ST3200920	TOSA	603022	LIMESTONE OF QUARRY	372,189.76	372,189.76
PF1_020	CHEF	ST3200920	TOSA	603031	LIMESTONE TO BE CONSUMED	259.29	259.29
PF1_020	CHEF	ST3204920	TOSA	603829	SAUMURE VIEFGE	282.04	282.04
PF1_020	CHEF	ST3240220	TOSA	62979	SE	46,025.45	46,025.45
PF1_020	CHEF	ST3240220	TOSA	603055	SE	816,011.89	816,011.89

✔ (2) = (3)

=> In case of discrepancies, a ticket should be created to get the support of the IS team

Material	Plant	Curr./Valuation	Value	Raw materials	Manufact.Activities	Packaging Materials
603055	TOSA	EUR	816,011.89	236,180.69	411,078.81	0,00
			816,011.89	236,180.70	411,078.81	0,00
			816,011.89	236,180.70	411,078.81	0,00
			0,00	0,00	0,00	0,00

### 2. DS\_2

Produced quantity (2) should be equal to Actual quantity (3)

✔ (1) = (2) - (3)

=> In case of discrepancies, a ticket should be created to get the support of the IS team.

Produced Qty vs Actual Qty (Index1-1)							
Source Sgst.	CD Area	Cost Object	Plant	Material	Check Prod Qty vs Actual Qty	Produced Qty	Actual Qty
PF1_020	CHEF	ST3200920	TOSA	603022	LIMESTONE OF QUARRY	-89.309	-89.309
		ST3200920	TOSA	603031	LIMESTONE TO BE CONSUMED	-80.071	-80.071
		ST3204920	TOSA	603829	SAUMURE VIEFGE	2,344	2,344
		ST3240220	TOSA	603055	SE	26,190	26,190
		ST3240920	TOSA	603953	SL CS1250 4SMVSH	-4.025	-4.025
				629590	SL S25 IPE P1250QHT H	-1.235	-1.235
				679494	SL CS1250 4SMVSH PQHHT	-123	-123
				200999	SL S25 IMPT-CPE ABS1250	-1,529	-1,529
		ST3240920	TOSA	31951	SL	-71,955	-71,955
		ST3240920	TOSA	607462	SD CS1250 4SMVSH	-10,239	-10,239
				609853	SD CS1250 4SMVSH PHHHT	-501	-501
				629591	SD S25 IPE P1250QHT H	-209	-209
				679594	SD S25 IPE PHHHT H	45	45
		ST3240920	TOSA	60956	SD	-48,002	-48,002
		ST3246320	TOSA	31972	SRA essore -A T	-4,830	-4,830

### 3. DS\_1

The aim of this control is to ensure that the total productions costs (2) calculated by iMEP is equal to variable costs (3) + fixed costs (4) + depreciation (5).

✔ (1) = (2) - ((3) + (4) + (5))

=> In case of discrepancies, a ticket should be created to get the support of the IS team

Mat. Ledger Costs vs ML VC + ML FX + ML DP							
Cost Object	Plant	Material	Check Total vs VC+FX+DP	Mat. Ledger Cost	ML VC	ML FX	ML DP
ST3200920	TOSA	603022	LIMESTONE OF QUARRY	372,189.76	98,438.51	221,631.82	42,068.43
ST3200920	TOSA	603031	LIMESTONE TO BE CONSUMED	259.29	259.29	0	0
ST3204920	TOSA	603829	SAUMURE VIEFGE	282.04	282.04	0	0
ST3240220	TOSA	603055	SE	46,025.45	46,025.45	0	0
ST3240920	TOSA	603953	SL CS1250 4SMVSH	7,890.29	7,890.29	0	0
		629590	SL S25 IPE P1250QHT H	-0.01	-0.01	0	0
		679494	SL CS1250 4SMVSH PQHHT	0.01	0.01	0	0
		200999	SL S25 IMPT-CPE ABS1250	0.01	0.01	0	0
ST3240920	TOSA	31951	SL	4,275,712.71	1,365,521.43	2,171,179.29	739,002.08
ST3240920	TOSA	607462	SD CS1250 4SMVSH	22,253.78	1,694.27	8,625.46	1,019.99
		609853	SD CS1250 4SMVSH PHHHT	-0.02	-0.01	0	0
		629591	SD S25 IPE P1250QHT H	424,576.05	130,533.93	254,248.43	39,793.63
ST3246320	TOSA	31972	SRA essore -A T	100,522.59	30,094.30	65,300.99	5,127.30

### 4. DS\_3

The aim of this control is to ensure that the total productions costs (Index 1 = 1 & 2) (2)(3) calculated by iMEP is equal to the sum of Raw materials (Index 1 = 3) (4) and activities (Index 1 = 5 & 7) (5)(6) costs.

✔ (1) = (2) - ((3) + (4) + (5) + (6))

=> In case of discrepancies, a ticket should be created to get the support of the IS team

Index1-1 vs Index1-3 + Index1-5 + ...						
Material	Check Index1-2-3-4-5-6-7	Mat. Ledger Costs Index1-1	Mat. Ledger Costs Index1-2	Mat. Ledger Costs Index1-3	Mat. Ledger Costs Index1-5	Mat. Ledger Costs Index1-7
603022	LIMESTONE OF QUARRY	-372,189.76	-372,189.76	372,189.76	372,189.76	372,189.76
603031	LIMESTONE TO BE CONSUMED	-506,659.38	-506,659.38	506,659.38	506,659.38	506,659.38
603829	SAUMURE VIEFGE	-282.04	-282.04	282.04	282.04	282.04
603055	SE	-46,025.45	-46,025.45	46,025.45	46,025.45	46,025.45
603953	SL CS1250 4SMVSH	-7,890.29	-7,890.29	7,890.29	7,890.29	7,890.29
629590	SL S25 IPE P1250QHT H	-0.01	-0.01	0.01	0.01	0.01
679494	SL CS1250 4SMVSH PQHHT	-0.01	-0.01	0.01	0.01	0.01
200999	SL S25 IMPT-CPE ABS1250	-0.01	-0.01	0.01	0.01	0.01
31951	SL	-4,275,712.71	-4,275,712.71	4,275,712.71	4,275,712.71	4,275,712.71
607462	SD CS1250 4SMVSH	-1,694.27	-1,694.27	1,694.27	1,694.27	1,694.27
609853	SD CS1250 4SMVSH PHHHT	0.01	0.01	0.01	0.01	0.01
629591	SD S25 IPE P1250QHT H	-39,793.63	-39,793.63	39,793.63	39,793.63	39,793.63
679594	SD S25 IPE PHHHT H	45	45	45	45	45
60956	SD	48,002	48,002	48,002	48,002	48,002
31972	SRA essore -A T	4,830	4,830	4,830	4,830	4,830



# The report

The report is displayed with the list of raw materials and the detail of stock movements

Material		* Beginning Inv.	In: Production	In: Others	Out: Consumpt./Pr	Out: Consumpt./Sal	Out: Other consumpt.
		EUR	EUR	EUR	EUR	EUR	EUR
30196	SD	234.074,96	5.091.065,04		383.348,50	1.968.914,62	2.805.032,28
31051	SL	165.090,96	6.731.599,89		5.352.445,94	291.580,38	1.079.416,30
31972	SRA essaire +A *T		165.575,82				165.575,82
32979	SE		64.762,60				64.762,60
51844	SL COLD	5.530,56		56.595,85		45.945,51	
53667	BB OUT CL @NT			51.110,95			51.110,95
100139	NH3 AMMONIAC ANHYDRE * GR	21.884,72		15.922,50	23.037,89		685,01
101584	AMMONIA 25% * GR	13.308,73		16.638,70			17.093,59
103055	SE		876.843,12		876.843,07		0,05
103058	LME		14.029,26		13.840,89		388,37
105474	CONDENSED WATER		30.981,16				30.981,16

There are 20 columns in the report for amounts (blue) and quantities (green)

1. Inventory at the beginning of the period entered in the prompt
2. Production of the material during the period
3. Other receipts such as purchases
4. Consumption of the material in production
5. Sales
6. Other consumption such as transfer to another plant
7. Other movements of inventory
8. Ending inventory
9. Delta is the difference between the beginning and the ending inventory
10. Control that the difference between the beginning inventory and the ending inventory corresponds to the sum of all inventory movements. It should be equal to zero.

Material		PF1_020/30156
		SD
* Beginning Inv. Amount	1	EUR 234,074.96
In: Production Amount	2	EUR 5,091,065.04
In: Others Receipts Amount	3	
Out: Consumpt./Prod Amount	4	EUR 383,348.50
Out: Consumpt./Sales Amount	5	EUR 1,968,914.62
Out: Other consumpt. Amount	6	EUR 2,805,032.28
In/Out: Others Amount	7	
* Ending Inv. Amount	8	EUR 167,844.60
Delta stock Amount	9	EUR -66,230.36
Check Amount	10	EUR
* Beginning Inv. Qty	1	TO 2,356
In: Production Qty	2	TO 49,210
In: Others Receipts Qty	3	
Out: Consumpt./Prod Qty	4	TO 3,712
Out: Consumpt./Sales Qty	5	TO 19,086
Out: Other consumpt. Qty	6	TO 27,162
In/Out: Others Qty	7	
* Ending Inv. Qty	8	TO 1,625
Delta stock Qty	9	TO -731
Check Qty	10	TO



This detail corresponds to the detail available in the transaction CKM3 - Material Price Analysis in PF1 by material code

Category		Quantity	Unit	Value
> Beginning Inventory	1	2.356.070,000	KG	234.074,96
> Receipts		49.209.505,000	KG	5.091.065,04
>> Production	2	49.209.505,000	KG	5.091.065,04
* Cumulative Inventory		51.565.575,000	KG	5.325.140,00
> Consumption		49.940.265,000	KG	5.157.295,40
>> Not Allocated		0,000	KG	0,02-
>>> Consumption	5	19.065.830,000	KG	1.968.914,62
>>> Production	4	3.712.125,000	KG	383.348,50
>>> Stock transfer	3	27.162.310,000	KG	2.805.032,30
>> Ending Inventory	8	1.625.310,000	KG	167.844,60

## 5.0 Non-functional Descriptions

### 5.1 Usability

as per standard.

### 5.2 Regulatory Compliance

as per standard.

### 5.3 Security

as per standard.

## 5.4 Performance

as per standard.

## 5.5 Reliability

as per standard.

## 5.6 Scalability

as per standard.

## 5.7 Compatibility

as per standard.

## 5.8 Availability

as per standard.

## 5.9 Refresh of the Data

The loads for this application it's once per day as we can see below at 6 a.m:

