



Italian National Agency for New Technologies,
Energy and Sustainable Economic Development

Energy audit in the industry sector in Italy: from obligation to opportunity

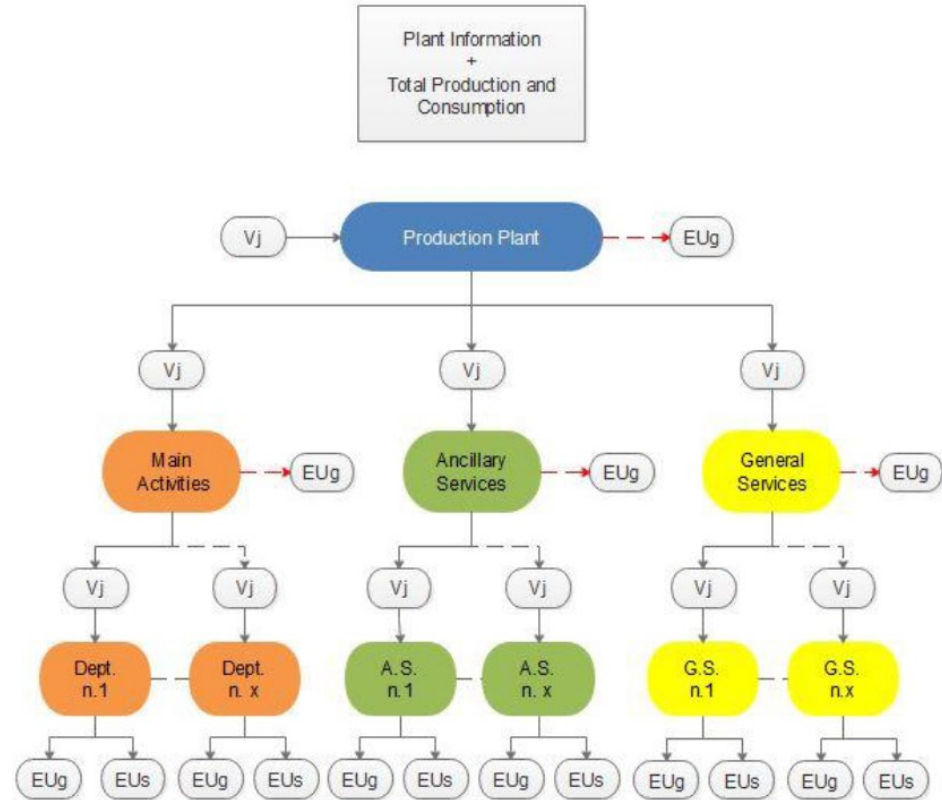
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*G20 Energy End-Use Data and Energy Efficiency Metrics initiative
Uncovering the role of digitalization for energy efficiency indicators*

Session 4 – From data collection to statistics and indicators

Energy audit within the Art. 8 of the EED

Together with the main stakeholders, ENEA developed an innovative scheme to analyze the energy structure of the audited production site. Through a multi-level procedure, a tree scheme allows to better define the energy performance, for each energy vector (electric, thermal, steam, hot water, etc.), splitting annual consumption by the different users within the production site.



Source: ENEA

Data collection

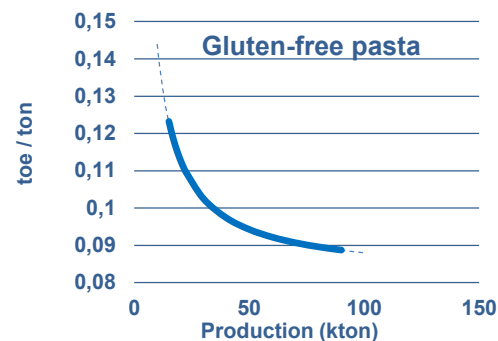
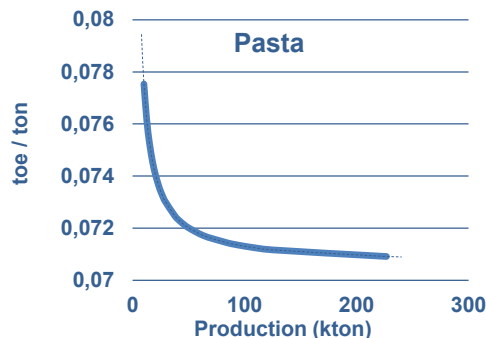
ENEA developed different documents to provide operational advices to auditors, to standardize reporting and accounting. A logic operational path has been proposed, along which structuring and organizing the energy audit. Together with different trade associations, specific guidelines were conceived to make the enterprises fully comply with Legislative Decree 102/2014, in particular for multi-site enterprises.

LA.1	INTERNAL TRASFORMATIONS	CODE	ENERGY VECTOR	u.m.	Balance	Cogeneration	Trigeneration	Photovoltaics	Wind	Other	Total	toe	Vtot [toe]	
		1	Electricity	kWh	Production								Use for internal transformation	0
					Internal consumption									
					Exportation								Production	0
		2	Natural gas	Sm3	Use									
					Production								Exportation	0
					Internal consumption									
					Exportation								Internal consumption	0
		3	Heat	kWh	Production									
					Internal consumption									
					Exportation									
		4	Cold	kWh	Production									
					Internal consumption									
					Exportation								<u>Total consumptions</u> (Consumption at LA - Internal consumption - Production - Exportation)	0
		...	Other		...									

Source: ENEA

Data analysis

Energy Performance Index (sub)sector by (sub)sector



Payback Period (PP)	Actions	Energy Saving	Economic saving	Cumulative investments	Cumulative distribution of investments
(years)	(n)	(toe/year)	(€/year)	(€)	(%)
PP ≤ 1	31	2.153	1.377.667	967.771	15%
PP ≤ 2	72	7.414	4.804.171	6.638.898	34%
PP ≤ 3	144	12.235	9.495.087	19.392.559	54%
PP ≤ 5	177	19.370	16.503.089	44.960.815	84%
PP ≤ 10	206	21.036	17.535.726	57.652.769	98%
PP > 10	211	21.389	17.725.494	62.433.144	100%

Energy saving potential

	Number of enterprises	Audited sites	Projects with payback time less than 3 years	Potential savings (ktoe)	Necessary investments (M€)
ATECO sector					
A - Agriculture, forestry and fishing	61	108	59	2.5	2.2
B - Mining and quarrying	40	75	31	5.7	3.5
C - Manufacturing	5,131	7,032	5,271	595.3	491.4
D - Electricity, gas, steam and air conditioning supply	232	492	194	38.1	32.2
E - Water supply, sewerage, waste management and remediation activities	324	921	276	24.3	18.7
F - Construction	175	323	97	10.1	6.9
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	892	2,433	896	24.2	21.2
H - Transportation and storage	416	934	272	27.7	18.1
I - Accommodation and food service activities	110	309	112	2.6	3.1
J - Information and communication	160	664	255	19.6	20.6
K - Financial and insurance activities	244	597	151	2.4	2.3
L - Real estate activities	59	114	52	2.2	2.2
M - Professional, scientific and technical activities	255	316	66	1.4	1.0
N - Administrative and support service activities	250	449	62	1.0	0.8
Other	337	693	570	22.5	22
Total	8,686	15,460	8,364	779.6	646

Data from SMEs

ATECO Sector	Enterprises	Sites	Energy Intensive SMEs
A	4	10	0
B	18	25	14
C	2.409	2.951	1.899
D	34	46	6
E	62	105	15
F	22	65	1
G	100	244	11
H	54	125	10
I	26	50	0
J	18	45	3
K	8	28	0
L	13	17	1
M	40	39	4
N	25	135	3
Q	26	52	5
R	20	23	1
Other	17	17	3
Total	2.896	3.977	1.976

Co-financing of energy audit in SMEs

Region / Province	2015 Prorgamme	2016 Programme	2017 Programme
Abruzzo	298.500 €	298.500 €	300.000 €
Apulia			900.000 €
Basilicata	149.250 €		150.000 €
Calabria		298.500 €	300.000 €
Campania		1.194.000 €	1.200.000 €
Emilia Romagna	1.194.000 €		1.200.000 €
Friuli Venezia Giulia	298.500 €	298.500 €	300.000 €
Lazio			1.350.000 €
Liguria	402.975 €		450.000 €
Lombardy	2.686.500 €	2.686.500 €	2.700.000 €
Marche	447.500 €	447.750 €	450.000 €
Molise			150.000 €
Piedmont	1.194.000 €	1.194.000 €	1.200.000 €
Sardinia	298.500 €	298.500 €	300.000 €
Sicily	895.500 €	895.500 €	900.000 €
Tuscany			1.050.000 €
Trentino Alto Adige			300.000 €
Umbria	298.500 €	298.500 €	300.000 €
Valle d'Aosta	149.250 €		150.000 €
Veneto	1.343.250 €		1.350.000 €
Province of Trento	149.250 €	149.250 €	
Total	9.805.475 €	8.059.500 €	15.000.000 €

Programmes for the cofinancing of the energy audit in SMEs

Source: Ministry of Economic Development

3-year Information & Training Programme



Brain storming for the definition of the activities of the Programme.

Analysis of barriers, key messages to be delivered and related tools and actions for:

- **SMEs and large enterprises**
- **Credit sector**
- **Public bodies**
- **Households and blocks of flat**



Conclusions

- EED energy audit obligation turned into an opportunity (and from “loss” to “investment” for the related cost)
- Obligation extended to electricity intensive SME (>2,4 GWh/year of consumption; >1 GWh/year since 2018)
- More than 3.000 SMEs involved, whose electricity consumption is more than 2% of total final consumption of Italy in 2016
- Shared step-by-step process: common approach for all sectors and derivation of energy performance index
- For SMEs, combination of different incentives for both the energy audit and the relative energy efficiency actions singled out

THANK YOU!
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