

Questionnaire ENERGY STATE OF THE ART: frequencies

Response

Country	Frequency	Percent	Valid Percent	Cumulative Percent
Austria (AT)	3	8,8	8,8	8,8
Bulgaria (BG)	4	11,8	11,8	20,6
Finland (FI)	1	2,9	2,9	23,5
France (FR)	4	11,8	11,8	35,3
Germany (DE)	4	11,8	11,8	47,1
Italy (IT)	12	35,3	35,3	82,4
Netherlands (NL)	2	5,9	5,9	88,2
Romania (RO)	4	11,8	11,8	100,0
Total	34	100,0	100,0	

Missing:

- Portugal (PT)
- Slovakia (SK)

City	Frequency	Percent	Valid Percent	Cumulative Percent
Arad	4	11,8	11,8	11,8
Citta della Pieva	2	5,9	5,9	17,6
Deruta	1	2,9	2,9	20,6
Dieppe	1	2,9	2,9	23,5
Duesseldorf	3	8,8	8,8	32,4
Franqueville	1	2,9	2,9	35,3
Furstenfeldbruch	1	2,9	2,9	38,2
Gallarate	1	2,9	2,9	41,2
Gleisdorf	1	2,9	2,9	44,1
Järvenpää	1	2,9	2,9	47,1
Lent	1	2,9	2,9	50,0
Louviers	1	2,9	2,9	52,9
Mantova	3	8,8	8,8	61,8
Nijmegen	1	2,9	2,9	64,7
Ostiglia	1	2,9	2,9	67,6
Palidano di Gonzaga	1	2,9	2,9	70,6
Perugia	1	2,9	2,9	73,5
Saint Adresse	1	2,9	2,9	76,5
Schio	1	2,9	2,9	79,4
Sofia	1	2,9	2,9	82,4
Sopot	1	2,9	2,9	85,3
Stainz	1	2,9	2,9	88,2
Stara Zagora	1	2,9	2,9	91,2
Suzzara	1	2,9	2,9	94,1
Thal	1	2,9	2,9	97,1
Veliko Tarnovo	1	2,9	2,9	100,0
Total	34	100,0	100,0	

Type of school	Frequency	Percent	Valid Percent	Cumulative Percent
Agricultural School	2	5,9	5,9	5,9
Berufkolleg	1	2,9	2,9	8,8
Economic Highschool	1	2,9	2,9	11,8
German Highschool	1	2,9	2,9	14,7
Gymnasium	2	5,9	5,9	20,6
Highschool	1	2,9	2,9	23,5
Industrial Highschool	1	2,9	2,9	26,5
Land- & F-Fachschule	2	5,9	5,9	32,4
Lycee	6	17,6	17,6	50,0
Primary School	2	5,9	5,9	55,9
Private Highschool	1	2,9	2,9	58,8
Professional Institute	9	26,5	26,5	85,3
Secondary School	2	5,9	5,9	91,2
Technical School	1	2,9	2,9	94,1
Transport Gymnasium	1	2,9	2,9	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

Educational Level	Frequency	Percent	Valid Percent	Cumulative Percent
Primary School	2	5,9	5,9	5,9
Secondary School	10	29,4	29,4	35,3
Vocational Education	21	61,8	61,8	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

A. ACCOMODATION

Schools have buildings used for educational activities and as such they are "energy consumers". We would like to know some details about your energy consumption related to the accommodation(s) you are using especially if applicable over the last four years.

1. Could you indicate the year of construction of the accommodation you are using for educational activities?

Year of construction	Frequency	Percent	Valid Percent	Cumulative Percent
1-10 years ago	5	14,7	14,7	14,7
10-20 years ago	4	11,8	11,8	26,5
over 20 years ago	25	73,5	73,5	100,0
Total	34	100,0	100,0	

2. How many square meters of that building does your school use?

Square meters used	Frequency	Percent	Valid Percent	Cumulative Percent
less than 5000	13	38,2	40,6	40,6
5000-15000	12	35,3	37,5	78,1
15000 or more	7	20,6	21,9	100,0
Total	32	94,1	100,0	
Missing System	2	5,9		
Total	34	100,0		

3. How many people study or work at your school (in full time-equivalent number of people per week)?

N-Respos	2008	2007	2006	2005
Students	N=34	N=30	N=28	N=26
Teachers & school staff	N=34	N=30	N=28	N=26
Other	N=34	N=30	N=28	N=26
Total	N=34	N=30	N=28	N=26

Note-1: N_respos means that one of the data of the year mentioned is given.

Note-2: In the analysis only the numbers of students and the total number of people are used.

N-students 2008	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 500	12	35,3	35,3	35,3
500-1000	14	41,2	41,2	76,5
1000-1500	6	17,6	17,6	94,1
1500 or more	2	5,9	5,9	100,0
Total	34	100,0	100,0	
N-people at school 2008	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 500	10	29,4	29,4	29,4
500-1000	11	32,4	32,4	61,8
1000-1500	10	29,4	29,4	91,2
1500 or more	3	8,8	8,8	100,0
Total	34	100,0	100,0	

N-students 2007		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	10	29,4	33,3	33,3
	500-1000	11	32,4	36,7	70,0
	1000-1500	7	20,6	23,3	93,3
	1500 or more	2	5,9	6,7	100,0
	Total	30	88,2	100,0	
Missing	System	4	11,8		
Total		34	100,0		
N-people at school 2007		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	9	26,5	30,0	30,0
	500-1000	10	29,4	33,3	63,3
	1000-1500	9	26,5	30,0	93,3
	1500 or more	2	5,9	6,7	100,0
	Total	30	88,2	100,0	
Missing	System	4	11,8		
Total		34	100,0		

N-students 2006		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	10	29,4	35,7	35,7
	500-1000	9	26,5	32,1	67,9
	1000-1500	7	20,6	25,0	92,9
	1500 or more	2	5,9	7,1	100,0
	Total	28	82,4	100,0	
Missing	System	6	17,6		
Total		34	100,0		
N-people at school 2006		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	9	26,5	32,1	32,1
	500-1000	8	23,5	28,6	60,7
	1000-1500	9	26,5	32,1	92,9
	1500 or more	2	5,9	7,1	100,0
	Total	28	82,4	100,0	
Missing	System	6	17,6		
Total		34	100,0		

N-students 2005		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	9	26,5	34,6	34,6
	500-1000	9	26,5	34,6	69,2
	1000-1500	6	17,6	23,1	92,3
	1500 or more	2	5,9	7,7	100,0
	Total	26	76,5	100,0	
Missing	System	8	23,5		
Total		34	100,0		

N-people at school 2005		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 500	8	23,5	30,8	30,8
	500-1000	9	26,5	34,6	65,4
	1000-1500	7	20,6	26,9	92,3
	1500 or more	2	5,9	7,7	100,0
	Total	26	76,5	100,0	
Missing	System	8	23,5		
Total		34	100,0		

4 How much energy per year does your school use?

N-Respons	2008	2007	2006	2005
Electricity (Kwh)	N=28	N=27	N=25	N=23
Gas (m ³)	N=28	N=27	N=25	N=23
Gas oil (m ³)	N=28	N=27	N=25	N=23
Fuel oil	N=28	N=27	N=25	N=23
Coal	N=28	N=27	N=25	N=23
Other + tekst	N=28	N=27	N=25	N=23

Note-1: N_respons means that one of the data referring to the year mentioned is given.

Note-2: In the analysis only the data on electricity and gas are used. Referring to the four other sources in the questionnaire, a new variable is constructed about 'the number of other sources mentioned'

Electricity 2008		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 30000	2	5,9	7,7	7,7
	30000-60000	7	20,6	26,9	34,6
	60000-120000	6	17,6	23,1	57,7
	more than 120000	11	32,4	42,3	100,0
	Total	26	76,5	100,0	
Missing	System	8	23,5		
Total		34	100,0		

Gas 2008		Frequency	Percent	Valid Percent	Cumulative Percent
	Less than 30000	3	8,8	18,8	18,8
	30000-60000	5	14,7	31,3	50,0
	60000-120000	5	14,7	31,3	81,3
	more than 120000	3	8,8	18,8	100,0
	Total	16	47,1	100,0	
Missing	System	18	52,9		
Total		34	100,0		

Other source 2008		Frequency	Percent	Valid Percent	Cumulative Percent
	None	15	44,1	53,6	53,6
	One source	11	32,4	39,3	92,9
	Two sources	1	2,9	3,6	96,4
	Three sources	1	2,9	3,6	100,0
	Total	28	82,4	100,0	
Missing	System	6	17,6		
Total		34	100,0		

Electricity 2007		Frequency	Percent	Valid Percent	Cumulative Percent
	less than 30000	2	5,9	8,0	8,0
	30000-60000	7	20,6	28,0	36,0
	60000-120000	5	14,7	20,0	56,0
	more than 120000	11	32,4	44,0	100,0
	Total	25	73,5	100,0	
Missing	System	9	26,5		
Total		34	100,0		

Gas 2007		Frequency	Percent	Valid Percent	Cumulative Percent
	less than 30000	3	8,8	21,4	21,4
	30000-60000	5	14,7	35,7	57,1
	60000-120000	4	11,8	28,6	85,7
	more than 120000	2	5,9	14,3	100,0
	Total	14	41,2	100,0	
Missing	System	20	58,8		
Total		34	100,0		

Other source 2007		Frequency	Percent	Valid Percent	Cumulative Percent
	None	13	38,2	48,1	48,1
	One source	12	35,3	44,4	92,6
	Two sources	1	2,9	3,7	96,3
	Three sources	1	2,9	3,7	100,0
	Total	27	79,4	100,0	
Missing	System	7	20,6		
Total		34	100,0		

Electricity 2006		Frequency	Percent	Valid Percent	Cumulative Percent
	less than 30000	2	5,9	8,7	8,7
	30000-60000	4	11,8	17,4	26,1
	60000-120000	7	20,6	30,4	56,5
	more than 120000	10	29,4	43,5	100,0
	Total	23	67,6	100,0	
Missing	System	11	32,4		
Total		34	100,0		

Gas 2006		Frequency	Percent	Valid Percent	Cumulative Percent
	30000-60000	3	8,8	27,3	27,3
	60000-120000	4	11,8	36,4	63,6
	more than 120000	4	11,8	36,4	100,0
	Total	11	32,4	100,0	
Missing	System	23	67,6		
Total		34	100,0		

Other source 2006		Frequency	Percent	Valid Percent	Cumulative Percent
	None	11	32,4	44,0	44,0
	One source	12	35,3	48,0	92,0
	Two sources	1	2,9	4,0	96,0
	Three sources	1	2,9	4,0	100,0
	Total	25	73,5	100,0	
Missing	System	9	26,5		
Total		34	100,0		

Electricity 2005		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 30000	1	2,9	4,8	4,8
	30000-60000	4	11,8	19,0	23,8
	60000-120000	7	20,6	33,3	57,1
	more than 120000	9	26,5	42,9	100,0
	Total	21	61,8	100,0	
Missing	System	13	38,2		
Total		34	100,0		

Gas 2005		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30000-60000	2	5,9	20,0	20,0
	60000-120000	4	11,8	40,0	60,0
	more than 120000	4	11,8	40,0	100,0
	Total	10	29,4	100,0	
Missing	System	24	70,6		
Total		34	100,0		

Other source 2005		Frequency	Percent	Valid Percent	Cumulative Percent
	None	11	32,4	47,8	47,8
	One source	10	29,4	43,5	91,3
	Two sources	1	2,9	4,3	95,7
	Three sources	1	2,9	4,3	100,0
	Total	23	67,6	100,0	
Missing	System	11	32,4		
Total		34	100,0		

Question A4: Other sources

2008:

PPN=1:A4086 = wood (in m3)
PPN=9:A4086 = No explanation given!
PPN=11:A4086 = Gcal.
PPN=12:A4086 = Biomass-heating Kwh.
PPN=15:A4086 = Petrol.
PPN=22:A4086 = Gas-heating Kwh.
PPN=26:A4086 = Tele-heating.
PPN=31:A4086 = Tele-heating.
PPN=34:A4086 = No explanation given!

2007:

PPN=1:A4076 = wood (in m3)
PPN=9:A4076 = No explanation given!
PPN=11:A4076 = Gcal.
PPN=12:A4076 = Biomass-heating Kwh.
PPN=15:A4076 = Petrol.
PPN=22:A4076 = Gas-heating Kwh.
PPN=26:A4076 = Tele-heating.
PPN=31:A4076 = Tele-heating.
PPN=33:A4076 = Heat Kwh.

2006:

PPN=1:A4066 = wood (in m3)
PPN=9:A4066 = No explanation given!
PPN=11:A4066 = Gcal.
PPN=12:A4066 = Biomass-heating Kwh.
PPN=15:A4066 = Petrol.
PPN=22:A4066 = Gas-heating Kwh.
PPN=26:A4066 = Tele-heating.
PPN=31:A4066 = Tele-heating.
PPN=33:A4066 = Heat Kwh.

2005:

PPN=9:A4056 = No explanation given!
PPN=11:A4056 = Gcal.
PPN=12:A4056 = Biomass-heating Kwh.
PPN=15:A4056 = Petrol.
PPN=22:A4056 = Gas-heating Kwh.
PPN=31:A4056 = Tele-heating.
PPN=33:A4056 = Heat Kwh.

B. GOVERNANCE

Schools might have the scope of policy-making referring to their use of energy. We would like to have some details about your influence on the school's energy consumption related to the accommodation you are using for educational activities.

1. Which organisation is the owner of the accommodation you are using?

Owner of accommodation	Frequency	Percent	Valid Percent	Cumulative Percent
The Government	5	14,7	14,7	14,7
A local authority	27	79,4	79,4	94,1
A private institute	2	5,9	5,9	100,0
Total	34	100,0	100,0	

2. Can you influence the use of energy of your accommodation?

Influence use of energy	Frequency	Percent	Valid Percent	Cumulative Percent
No	7	20,6	20,6	20,6
Yes	27	79,4	79,4	100,0
Total	34	100,0	100,0	

Management of use of energy	Frequency	Percent	Valid Percent	Cumulative Percent
Through the headmaster	8	23,5	29,6	29,6
Through the school board	4	11,8	14,8	44,4
By public experts	1	2,9	3,7	48,1
By private experts	1	2,9	3,7	51,9
Otherwise + tekst	13	38,2	48,1	100,0
Total	27	79,4	100,0	
Missing System	7	20,6		
Total	34	100,0		

Question B22=5

PPN=1:Housekeeper, janitor.

PPN=2:Sending a request to the city-department involved.

PPN=12:Trough the headmaster, the school board and by public experts.

PPN=20:One teacher is responsible.

PPN=21:A team of teachers ("improvement group", responsible for cleanness / tidiness, environment, energy).

PPN=22:By public and private experts.

PPN=23:Trough the headmaster and by public experts.

PPN=27:Education to energy saving.

PPN=29:Through the school board; through students' and teachers' behaviours and pressure on the school board.

PPN=30:Through teachers.

PPN=32:By technical support.

PPN=33:A private consulting company is involved; one teacher is responsible for environment protection and coordinates the work; the school has a greenteam (students, who are engaged in environmental protection); the caretaker monitors the energy consumption.

PPN=34:Through the headmaster and by public experts.

3. Which habits are practised in your school?

Habits practised (N=34)	No	Yes
Use of specific lamps	32,4%	67,6%
Use of circulating water	82,4%	17,6%
Appliances with low consumption	58,8%	41,2%
Sun protection	82,4%	17,6%
double glazing	20,6%	79,4%
power switches	79,4%	20,6%
others + tekst	61,8%	38,2%

Question B37=1

PPN=2:Using sensors who turn off electricity (i.e. the lights) after certain time.

PPN=4:No explanation is given!

PPN=5:No explanation is given!

PPN=7:No explanation is given!

PPN=8:Neon illumination & turning off the lights and heat during the weekend and Holidays.

PPN=12:Time switch.

PPN=15:Limiting the energy consumption depending on the weather conditions.

PPN=20:No specific / efficient equipment – but smart / intelligent behaviour = to switch out the lamps (switches are labeled, so it is easy to find the right switch), to open the windows only short time, to regulate the heating when windows are open.

PPN=21:In one of the buildings (the school consists of 4 buildings) i.e. Pestalozzistraße where only a small part of students is educated, they lamps in the floors are switched automatically when persons move through the floors. Furthermore: no specific or efficient equipment – the school saves energy mainly by behaviour: to switch out the lamps when not necessary, to open the windows only short time. The school will be renovated or reconstructed within the next years, until that time no money will be spent for new efficient lamps, equipment, and so on.

PPN=28:Neon lamps with potentiometer.

PPN=32:By "beton kernactivering" meaning: heating the stone floors and using temperature of the ground-water.

PPN=33:Appliances with low consumption are planned; the lamps in the floors shall be switched automatically when persons move through the floors (in spring 2009); in case of new buildings, that will take place under the current German environmental framework / law.

PPN=34:Adjusting periods of ventilation.

4. Which incentives do you use in order to influence the energy consumption?

Incentives used (N=34)	No	Yes	Unknown
Internal communication	8,8%	79,4%	11,8%
consumption display	55,9%	32,4%	11,8%
other + tekst	73,5%	14,7%	11,8%

Question B43=1

PPN=2:A lot of different activities and means.

PPN=5:No explanation is given!

PPN=7:Behaviour.

PPN=15:Material stimulation.

PPN=20:A diagramme of energy consumption is hanging in the floor (target group seems to be the teachers); class rooms are equipped with thermometers, so the students can monitor room temperature.

5. Do you work with action plans to reduce the use of energy?
 6. Are there any national energy policies relevant to your school? If yes, please describe...
 7. Does your school have support in the area of sustainable energy use? If yes, please explain...

Plans, politics & support (N=34)	No	Yes	Unknown
Action plans to reduce use of energy	61,8%	38,2%	
Relevant national energy policies If yes + tekst	76,5%	23,5%	
Support use of sustainable energy If yes + tekst	47,1%	47,1%	5,9%

Question B6=1

PPN=3:No explanation is given!

PPN=7:No explanation is given!

PPN=15:There was a thermograph analysis of the building but no money was granted.

PPN=25:More sunshine at school.

PPN=28:The project "Sun at school" based on installation of a demonstrative photovoltaic system of 10 square meters, launched by the Ministry of Environment and promoted by Mantova Province.

PPN=30:The governmental incentives to produce electricity through photovoltaic system.

PPN=31:Demonstrative photovoltaic panels thank to national project "Il sole a scuola" locally promoted by Provincia di Mantova.

PPN=34:National energy saving strategy.

Question B7=1

PPN=1:No explanation is given!

PPN=3:The landimmobilien-cooperation is supporting us.

PPN=5:No explanation is given!

PPN=12:Biomass-activities and biogas-activities.

PPN=15:The Ministry of Education regularly supplies the school with fuel.

PPN=17:One heating system using peanuts shell.

PPN=21:50:50 programme of the City of Duesseldorf: If the school saves 1.000 Euro of energy costs, water purchase or waste by management or by intelligent behaviour, they get 500 Euro for improvement of school quality / 500 Euro remain in the City. In fact, the school saved approximately 6.000 to 8.000 euro per year and, thus, gets a share of 3.000 to 4.000 euro per year. This is a very strong motivation: The school spends this money e.g. to buy equipment, software, media, to support projects of students. It leads to the consequence, that teachers and many students know 'we benefit from energy efficiency, energy saving and environmental protection'. Partner is the City of Duesseldorf, department of environment and department for maintenance of buildings. They do not only share the benefits of energy saving (the money), the City of Duesseldorf also sends experts and/or consultants to the schools, who help to identify weak points and potentials for energy saving.

PPN=23:Local and regional organizations helps us.

PPN=25:Local authority supports us.

PPN=27:By the national project "Sun at school" launched by the Ministry of Environment and promoted locally by Mantova Province.

PPN=28:During the last years the school was given by Mantova Province:

- 1) a new building, 3.319 square meters, built according to a sustainable use of energy, having heat pumps, underfloor heating, a special insulating "coat" and an accurate control system, working from October 2007;
- 2) 6 solar vacuum tube panels 2,3 square meters each , not yet working;
- 3) a new high efficiency condensing boiler, substituting an old one.

PPN=29:Support for the demonstrative photovoltaic system ("Il sole a scuola" national Project) and for miscantus demonstrative research (renewable energy).

PPN=30:Support with funds by banks and Mantova Province.

PPN=31:Support by photovoltaic panels, not yet active.

PPN=32:The company that has built the school suggests and supports us in the use of the installation.

PPN=33:50:50 programme of the City of Duesseldorf: If the school saves 1.000 Euro of energy costs, water purchase or waste by management or by intelligent behaviour, they get 500 Euro for improvement of school quality / 500 Euro remain in the City.

C. EDUCATION

'Energy' can be a subject matter of your curriculum. We would like to know if that's the case and how this part of the curriculum is organised.

1. Could you inform us about the age group of your students?

Students Age Groups (N=34)	No	Yes	Unknown
Age group 5-12	64,7%	23,5%	11,8%
Age group 12-15	44,1%	44,1%	11,8%
Age group 16-older	8,8%	79,4%	11,8%

Note: Age group 5-8 & 8-12 are added into 'age group 5-12'.

2. Is 'the use of energy' a subject matter of your curriculum?

Use of energy a subject matter (N=34)	Frequency	Percent	Valid Percent	Cumulative Percent
No	5	14,7	14,7	14,7
Yes, as a (scientific) concept	13	38,2	38,2	52,9
Yes, as a social need	2	5,9	5,9	58,8
Yes, as a concept & social need	13	38,2	38,2	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

3. How does energy fit into your curriculum?

Energy fit into the curriculum	Frequency	Percent	Valid Percent	Cumulative Percent
As a specific topic to focus on	3	8,8	8,8	8,8
Integrated into multiple subjects	30	88,2	88,2	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

4. What kinds of energy can you recognise in your curriculum?

Kinds in curriculum (n=34)	No	Yes	Unknown
potential energy	26,5%	70,6%	2,9%
kinetic energy	32,4%	64,7%	2,9%
Thermal energy	14,7%	82,4%	2,9%
Electric energy	8,8%	88,2%	2,9%
chemical energy	26,5%	70,6%	2,9%
Nuclear energy	50,0%	47,1%	2,9%
Surface energy	67,6%	29,4%	2,9%
geothermal energy	41,2%	55,9%	2,9%
other kinds of energy + tekst	70,6%	26,5%	2,9%

Question C49=1

PPN=1: Biomass.

PPN=2: None – the school concentrates on the use (and/or abuse) of energy.

PPN=3: Renewable energy.

PPN=4: Oil.

PPN=12: Wind, solar-energy.

PPN=15: Magnetic.

PPN=21: It is a vocational school. Use of energy / Energy efficiency is a part of everyday worklife, because of its economic relevance + because of environmental law / framework. That's why, the teacher considers it as a basic topic of the vocational education.

PPN=26: All the types of energy mentioned.

PPN=30: Solar-energy.

5. Are you free to implement 'the use of energy' as a subject matter in your curriculum?

Free to implement (N=34)	No	Yes	Unknown
as organisation (i.e. based on national or regional directives)	70,6%	26,5%	2,9%
as management (i.e. school council)	58,8%	38,2%	2,9%
as teacher or group of teachers	20,6%	76,5%	2,9%

6. In what way are students actively involved in the energy issue?

Students involved (N=34)	No	Yes	Unknown
Students involved - workshops	52,9%	35,3%	11,8%
Students involved - club	82,4%	5,9%	11,8%
Students involved - thematic day	29,4%	58,8%	11,8%
Students involved - specific projects	20,6%	67,6%	11,8%
Students involved otherwise + tekst	58,8%	29,4%	11,8%

Question C65=1

PPN=2: If students leave open a door, they are told that they must shut it otherwise...

PPN=4: No explanation is given!

PPN=5: Personal work (!?)

PPN=6: Personal work (!?).

PPN=12: As a part in the several lessons, especially in the technical topics.

PPN=15: During lessons, at local exhibitions.

PPN=21: Specific projects focus at the use of energy in the specific professions (but less/not in the school life) e.g. the project "The green hotel", which includes aspect of energy beside many other aspects or the project "How to print with zero CO2 emissions". The 50:50-programme of the city motivates/stimulates not only teachers – but also students – to save energy in their school.

PPN=23: No explanation is given!

PPN=33: Energy (& efficiency, & environment, &...) is part of the curriculum in several subjects; it is part of standard lessons.

PPN=34: Visits to energy companies.

7. Does your school make an Energy Audit of the accommodation related to heating/cooling, electricity and housing?

Energy audit related to energy use	Frequency	Percent	Valid Percent	Cumulative Percent
No	8	23,5	23,5	23,5
Yes	26	76,5	76,5	100,0
Total	34	100,0	100,0	

If yes, what kind of audit?

Kind of audit (N=26)	No	Yes
Collection and analysis of consumption data	57,7%	42,3%
Analysis and assessment of installations used	42,3%	57,7%
Combined analysis (consumption data and installations used)	57,7%	42,3%

If yes, who are involved in the audit activities?

Involvement audit (N=26)	No	Yes
Students involved in audit	76,9%	23,1%
School staff involved in audit	34,6%	65,4%
External organisation involved in audit	23,1%	76,9%

D TEACHERS AND SCHOOL STAFF TRAINING NEEDS

1. Are your teachers trained in order to provide lessons on the use of energy?

Teachers are trained (N=34)	Frequency	Percent	Valid Percent	Cumulative Percent
No	17	50,0	50,0	50,0
Yes	16	47,1	47,1	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

2. Do you feel competent in matters of sustainable development (history and concept)?

3. Do you feel competent in matters of 'Education on sustainable development'?

4. Do you feel competent in matters of 'Problems of energy and environment'?

5. Do you feel competent in matters of 'Energy efficiency, Energy saving'?

6. Do you feel competent in matters of 'Principles and use of renewable energy sources'?

7. Do you feel competent in matters of 'Institutional framework in energy efficiency and renewable energy

(European directives, national and regional initiatives, socio-economic aspect, grant, etc.)'?

8. Do you feel competent in matters of 'European standards, Labialization, Norms' (concerning equipment, energy consumption, climate label, car labelling, etc.)?

Competences	Mean
Competence sustainable development (N=31)	3,00
Competence education on sustainable development (N=31)	2,84
Competence energy and environment (N=31)	2,97
Competence energy efficiency and saving (N=31)	3,00
Competence renewable energy sources (N=31)	2,97
Competence institutional framework (N=31)	2,10
Competence european standards (N=30)	1,77

2. Do you feel competent in matters of sustainable development (history and concept)?

Training needs in matters of sustainable development:

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	5,9	5,9	5,9
Yes	30	88,2	88,2	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	
Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	8	23,5	23,5	23,5
Yes	24	70,6	70,6	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	

3. Do you feel competent in matters of 'Education on sustainable development'?

Training needs in matters of 'Education on sustainable development':

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	5,9	5,9	5,9
Yes	30	88,2	88,2	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	
Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	9	26,5	26,5	26,5
Yes	22	64,7	64,7	91,2
Unknown	3	8,8	8,8	100,0
Total	34	100,0	100,0	

4. Do you feel competent in matters of 'Problems of energy and environment'?

Training needs in matters of 'Problems of energy and environment':

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	5,9	5,9	5,9
Yes	28	82,4	82,4	88,2
Unknown	4	11,8	11,8	100,0
Total	34	100,0	100,0	
Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	7	20,6	20,6	20,6
Yes	22	64,7	64,7	85,3
Unknown	5	14,7	14,7	100,0
Total	34	100,0	100,0	

Teacher Needs D4 (N=34)	No	Yes	Unknown (N=6)
On green house gases	44,1%	38,2%	17,6%
On climate change	20,6%	61,8%	17,6%
On CO-2 balance	35,3%	47,1%	17,6%
On energy scenario	5,9%	76,5%	17,6%
Other Staff Needs D4 (N=34)	No	Yes	Unknown (N=7)
On green house gases	50,0%	29,4%	20,6%
On climate change	44,1%	35,3%	20,6%
On CO-2 balance	47,1%	32,4%	20,6%
On energy scenario	20,6%	58,8%	20,6%

5. Do you feel competent in matters of 'Energy efficiency, Energy saving'?

Training needs in matters of 'Energy efficiency, Energy saving':

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	5,9	5,9	5,9
Yes	29	85,3	85,3	91,2
Unknown	3	8,8	8,8	100,0
Total	34	100,0	100,0	

Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	6	17,6	17,6	17,6
Yes	25	73,5	73,5	91,2
Unknown	3	8,8	8,8	100,0
Total	34	100,0	100,0	

6. Do you feel competent in matters of 'Principles and use of renewable energy sources'?

Training needs in matters of 'Principles and use of renewable energy sources':

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	3	8,8	8,8	8,8
Yes	29	85,3	85,3	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	

Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	6	17,6	17,6	17,6
Yes	25	73,5	73,5	91,2
Unknown	3	8,8	8,8	100,0
Total	34	100,0	100,0	

Teacher Needs D6 (N=34)	No	Yes	Unknown (N=4)
On solar thermal	29,4%	58,8%	11,8%
On photovoltaic	29,4%	58,8%	11,8%
On hydroelectric and marine energy	58,8%	29,4%	11,8%
On energy from biomass	41,2%	47,1%	11,8%
On geothermal	47,1%	41,2%	11,8%
On other alternative sources	58,8%	29,4%	11,8%

Other Needs D6 (N=34)	No	Yes	Unknown (N=5)
On solar thermal	35,3%	50,0%	14,7%
On photovoltaic	32,4%	52,9%	14,7%
On hydroelectric and marine energy	67,6%	17,6%	14,7%
On energy from biomass	52,9%	32,4%	14,7%
On geothermal	47,1%	38,2%	14,7%
On other alternative sources	61,8%	23,5%	14,7%

7. Do you feel competent in matters of 'Institutional framework in energy efficiency and renewable energy (European directives, national and regional initiatives, socio-economic aspect, grant, etc.)'?

Training needs:

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	2	5,9	5,9	5,9
Yes	30	88,2	88,2	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	

Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	12	35,3	35,3	35,3
Yes	20	58,8	58,8	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	

8. Do you feel competent in matters of 'European standards, Labialization, Norms' (concerning equipment, energy consumption, climate label, car labelling, etc.)?

Training needs in matters of 'European standards, Labialization, Norms'

Needs teachers	Frequency	Percent	Valid Percent	Cumulative Percent
No	6	17,6	17,6	17,6
Yes	27	79,4	79,4	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

Needs other school staff	Frequency	Percent	Valid Percent	Cumulative Percent
No	12	35,3	35,3	35,3
Yes	20	58,8	58,8	94,1
Unknown	2	5,9	5,9	100,0
Total	34	100,0	100,0	

E. BEST PRACTICE

1. Do you cooperate in energy programmes with other organisations?

Cooperate in Energy programmes	Frequency	Percent	Valid Percent	Cumulative Percent
No	10	29,4	29,4	29,4
Yes	24	70,6	70,6	100,0
Total	34	100,0	100,0	

If yes (E11=1), at what level?

Cooperation level	Frequency	Percent	Valid Percent	Cumulative Percent
Local and regional	17	50,0	70,8	70,8
National	3	8,8	12,5	83,3
European	2	5,9	8,3	91,7
Other level + tekst	2	5,9	8,3	100,0
Total	24	70,6	100,0	
Missing System	10	29,4		
Total	34	100,0		

Question E12=4

PPN=2:In specific projects with our students.

PPN=33:50:50 programme of the City of Duesseldorf and at the EU-level (Comenius-project).

2. Do you use alternative sources of energy?

Use of alternative energy sources	Frequency	Percent	Valid Percent	Cumulative Percent
No	20	58,8	58,8	58,8
Yes	14	41,2	41,2	100,0
Total	34	100,0	100,0	

If yes (E21=1),, which one(s) do you use?

Alternative energy sources used	Frequency	Percent	Valid Percent	Cumulative Percent
Solar energy	7	20,6	50,0	50,0
Other alternative sources + tekst	6	17,6	42,9	92,9
Unknown	1	2,9	7,1	100,0
Total	14	41,2	100,0	
Missing System	20	58,8		
Total	34	100,0		

Question E22=4

PPN=1:Biomass, wood.

PPN=3:Renewable, wood, electricity.

PPN=12:Biomass.

PPN=32:Temperature of ground water.

PPN=33:This is a big issue for the school! The school had a small photovoltaic power plant at the roof of the old gym. With the pull down of the old gym, it was deconstructed. Now they have a new gym, but without photovoltaic power plant – which is a problem for the motivation of students + teachers. A big photovoltaic power plant is planned (230 moduls, 40,25 kW peak). It is one measurement in the climate protection action plan of the City of Duesseldorf: The city dedicates the roofs of some public buildings to such called “citizens solar power plants”. The school is one of these buildings; another school (Humboldt-school) already has such a “citizens solar power plant” on its roof. It works like follows: Citizens (including students, parents, teachers) can put in money = they become shareholder of the power plant. A private company (“Solar Progress») does the management.

If yes (E21=1), in what proportion do you use alternative energy compared to traditional

Proportion alternative energy sources	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 2%	4	11,8	28,6	28,6
Between 2 and 5%	1	2,9	7,1	35,7
Between 5 and 10%	1	2,9	7,1	42,9
More than 10%	5	14,7	35,7	78,6
Unknown	3	8,8	21,4	100,0
Total	14	41,2	100,0	
Missing System	20	58,8		
Total	34	100,0		

3. Is the attention for energy focussed on its technical explanation?

Attention focussed on technical aspects	Frequency	Percent	Valid Percent	Cumulative Percent
No	20	58,8	58,8	58,8
Yes	13	38,2	38,2	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

4. Do you have educational programmes focussed on the attitude towards energy?

Educational programmes focussed on attitudes	Frequency	Percent	Valid Percent	Cumulative Percent
No	17	50,0	50,0	50,0
Yes	17	50,0	50,0	100,0
Total	34	100,0	100,0	

5. Is energy usage an issue in your school plan/programme by which you are able to incorporate sustainable development as part of everyday school life?

Sustainable development part of everyday school life	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No	24	70,6	70,6	70,6
Yes	9	26,5	26,5	97,1
Unknown	1	2,9	2,9	100,0
Total	34	100,0	100,0	

If yes (E5=1), please specify + tekst

Question E5=1

PPN=2: We incorporate if and where possible.

PPN=6: No explanation is given!

PPN=12: Biomass-heating to reduce energy usage; Biomass can be an important source of income for our students.

PPN=18: The Liceo (Italy) is participating for several years at the project called "Energia in gioco". Besides this one class has won a master on renewable energy proposed by ENEL (Electrical Energy National Agency); there also have been meeting between the students and experts of energy sources and renewable energy. Our 4 classes are working on renewable energies through simple experiments: the electrolysis of water, the photovoltaic cells and the functioning of a hydrogen engine.

PPN=19: The Professional Institute (Technico Italy) participates in the project of which this questionnaire takes part. For several years the school has included in its POF projects with the topic of environment, in which specific aspects concerning the energy sector dominate. The Institute has participated in projects as "European Week of alternative energy", "Energia in gioco", "Play Energy", several COOP-Projects and in particular in the campaign "I illuminate myself less". The work usually is carried out with the assistance of experts (ASL, ARPA, ENEL, TSA, Environmental Associations) about the topics of energy consumption, of alternative energy and of saving energy.

PPN=27: Dissemination of posters in school for an eco-sustainable school.

PPN=30: No explanation is given!

PPN=33: It is an issue in the school programme, but the incorporation into everyday school life is handicapt/tackled by many problems (see other question or ask Tilman).

PPN=34: Energy saving guide.

6. In our school we do have experience in:

Experience (Best Practice 6) N=34	No	Yes	Unknown (N=9)
Experience with energy audit	23,5%	50,0%	26,5%
Experience with thermograph analysis	61,8%	11,8%	26,5%
Experience with CO-2 balance	55,9%	17,6%	26,5%
Experience with equipment in renewable energy + tekst	38,2%	35,3%	26,5%
Other experience + tekst	70,6%	2,9%	26,5%

Question E64=1

PPN=1: Biomass and solar-energy.

PPN=3: No explanation is given!

PPN=5: No explanation is given!

PPN=6: No explanation is given!

PPN=7: No explanation is given!

PPN=12: Heating, producing firewood.

PPN=16: No explanation is given!

PPN=23: Photovoltaic panel.

PPN=30: Photovoltaic system and heatpumps.

PPN=31: Photovoltaic panel.

PPN=32: No explanation is given!

PPN=33: Solar power plant.

Question E65=1

PPN=23: Eco-house project.

OTHER REMARKS

PPN=2: The school is a primary school and situated in a relatively new part of the City of Nijmegen. Therefore the school is young and has grown enormously since 2003. The answers of the questionnaire refer to the 'state of the art' of the school since 2008, when it moved towards a new accommodation and became part of a so-called multifunctional centre. This means that the school pays monthly 'service costs' to the organisation which governs the building and that the school has no figures at all referring to their energy use.

PPN=20: The School joined the 50:50 programme of the City of Duesseldorf in 2008. In 2008 they saved 4671 Euro of energy and water costs and, thus, got a share of 2336 Euro.

PPN=20: The school does make an Energy Audit of the accommodation related to heating/cooling, electricity and housing. The audit consists of:

- Collection and analysis of consumption data: data are collected every month by the caretaker. Data are analyzed by external energy related organization (a well known & big consulting company); the consultant – if necessary – gives feedback, explanation, advise (z.B Ausreißer Energieverbrauch Januar 2009 wegen Sanierung feuchter Wände / Trocknungsgebläse und kaltem Winter.)

- Analysis and assessment of installations used, = planned for electrical equipment with measurement from the environmental department of the City of Duesseldorf mit Strommessgerät vom Umweltamt.

In the audit activities are involved:

- * students – temperature monitoring by all classes
- * students - measurement of electrical power by 3.+4. classes
- * School staff (Mr. Kohlhasse)
- * External energy related organisations (Gertec)

PPN=20: The school does not use alternative sources of energy – that is no specific use, no production of renewable energy by the school, no solar panels at the roof. But the City of Düsseldorf purchases mixed electricity, which includes 17 percent of renewable electrical power. (including power from waste combustion..)

PPN=28: The school is essentially structured in two buildings (a third building has small influence on energy use): the old one built over 20 years ago, the new one, built in 2007 following sustainable energy criteria. In this new building, electricity is used to transfer thermal energy from groundwater to the building (heat pumps using geothermal energy). The amount of electric energy used in this way is added to electricity used for lighting, making it more difficult the comparisons from one year to another.

PPN=29: The technical school for Agriculture is made by two sections: the main section, located in Palidano di Gonzaga (in Mantova province), consists of an ancient and historic building, where it is forbidden to modify structures, and other facility buildings (greenhouse, etc); the other section called "Bigattera", located in a suburb of Mantova town, is structured in three buildings.

PPN=33: In general, my interview partner said that teacher / staff training is no basic need. She has made bad experience with teacher trainings, which were not high quality and did not cover the needs of the school / the teachers. Trainers have to be very competent, the participants should experience the benefit of the training! Knowledge about energy (&environment, &efficiency,...) is available. Many people know the climate protection challenge. The very basic problem is the gap between knowledge and acting! Trainings which cover this gap from viewpoint of schools, would be helpful! She said: The very limiting factor for energy efficiency + renewables + environmental education in her school is not a lack of training but many serious problems of management (too much persons in the municipality, who seem to be responsible, but do not act instantly / very long time for response ... and so on)

My interview partner said: Today, Problems of energy and environment are well known to everybody. No need for training, but teaching / learning material with up-to-date figures and facts would be helpful. Advise + best practise examples for the implementation in schools would be helpful, too.