

Appendix V Results of partners’ questionnaire, part E, Register and monitoring of SGE installations

#	Question
E.1	Comprehensive register of SGE installations / systems
E.1.1	Do you have in your country a register of SGE installations?
E.1.2	If yes, is it comprehensive and regularly updated?
E.1.3	If yes, is your GSO involved in running the register?
E.1.4	If yes, is the register publically available?
E.1.5	If no, is the lack of the register a barrier for development of SGE market?
SUBTOTAL E.1	SUBTOTAL 1

P01 GBA AT	P02 NERC UK	P04 HGI-CGS HR	P05 CGS CZ	P06 BRGM FR	P07 GSI IE	P08 RBINS- GSB BE	P09 GeoZS SI	P10 IGME ES	P11 SGU SE	P12 TNO NL	P13 PIG-PIB PL	P14 SGIDS SK	P16 GEUS DK
decision up to regional regulations	yes	no	no	yes	no	yes	no	no	yes	yes	no	decision up to regional regulations	yes
no	yes	no		no	no	yes	no		yes	yes		no	decision up to regional regulations
no	no	no	no	yes	no	case to case decision	no		yes	no		no	no
yes	no	no		yes	case to case decision	yes	yes		yes	no		no	no
yes		no	yes		yes		yes	yes		no	no	yes	no

Appendix V Results of partners’ questionnaire, part E, Register and monitoring of SGE installations

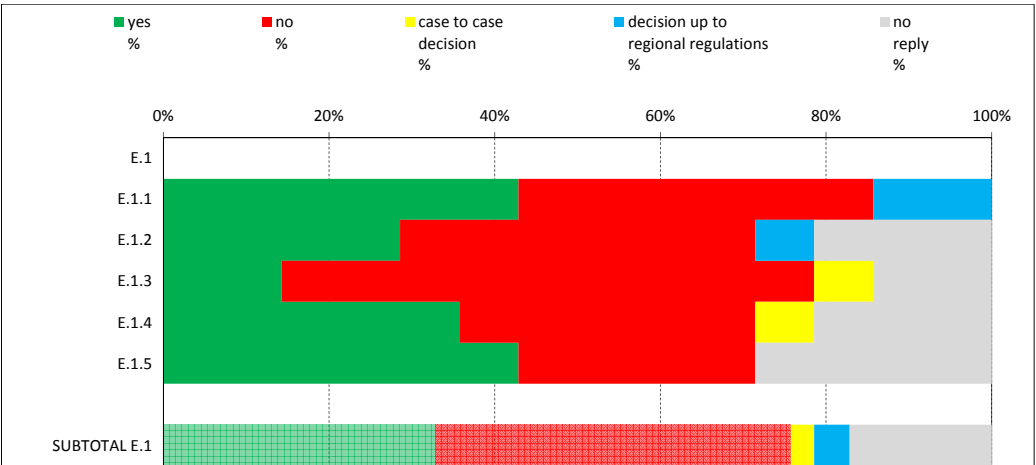
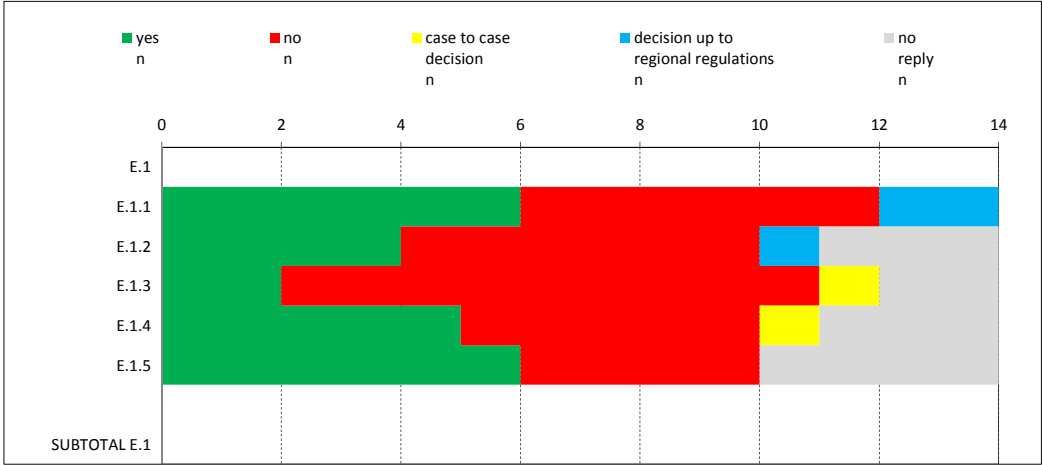
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E.1.5	If no, is the lack of the register a barrier for development of SGE market?
SUBTOTAL E.1	SUBTOTAL 1

yes n	no n	case to case decision n	decision up to regional regulations n	no reply n	total replies n	total respondents* n
6	6	0	2	0	14	14
4	6	0	1	3	11	14
2	9	1	0	2	12	14
5	5	1	0	3	11	14
6	4	0	0	4	10	14
23	30	2	3	12	58	70

yes %	no %	case to case decision %	decision up to regional regulations %	no reply %	total replies %	total respondents* %
42,86%	42,86%	0,00%	14,29%	0,00%	100,00%	100,00%
28,57%	42,86%	0,00%	7,14%	21,43%	78,57%	100,00%
14,29%	64,29%	7,14%	0,00%	14,29%	85,71%	100,00%
35,71%	35,71%	7,14%	0,00%	21,43%	78,57%	100,00%
42,86%	28,57%	0,00%	0,00%	28,57%	71,43%	100,00%
32,86%	42,86%	2,86%	4,29%	17,14%	82,86%	100,00%

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E.1.4	If yes, is the register publically available?
E.1.5	If no, is the lack of the register a barrier for development of SGE market?
SUBTOTAL E.1	SUBTOTAL 1



Appendix V Results of partners' questionnaire, part E, Register and monitoring of SGE installations

E.2	Monitoring of SGE installations / systems
E.2.1	Is monitoring of SGE installations (system efficiency and/or environmental) compulsory in your country?
E.2.2	If yes, do the authorities enforce monitoring?
E.2.3	If yes, is monitoring applied to all installations independently of the installed capacity or only to large capacity installations? If yes, what is the minimum capacity for obligatory monitoring (write the threshold value in comments)?
E.2.4	If yes, do the authorities run a general digital database in which the monitoring data of the individual installations is stored?
E.2.5	If yes, are the monitoring results of the public buildings publically available?
E.2.6	If yes, is your GSO involved in monitoring of SGE installations?
E.2.7	If yes, are there any recommendations on monitoring of efficiency of SGE installations available?
	If yes, which parameters are monitored:
E.2.8	Heating/cooling installed capacity
E.2.9	Operating hours
E.2.10	Electricity consumption
E.2.11	Water extraction volume
E.2.12	Water injection volume
E.2.13	Temperature of extracted water
E.2.14	Temperature of injected water
E.2.15	Ground temperature
E.2.16	Heating/cooling medium temperature
E.2.17	Thermal energy production
E.2.18	Other
SUBTOTAL E.2	

P01 GBA AT	P02 NERC UK	P04 HGI-CGS HR	P05 CGS CZ	P06 BRGM FR	P07 GSI IE	P08 RBINS- GSB BE	P09 GeoZS SI	P10 IGME ES	P11 SGU SE	P12 TNO NL	P13 PIG-PIB PL	P14 SGIDS SK	P16 GEUS DK
decision up to regional regulations	case to case decision	no	no	no	no	yes	case to case decision	yes	no	yes	no	decision up to regional regulations	yes
decision up to regional regulations	case to case decision	no	no		no	case to case decision	case to case decision	yes	case to case decision	yes		decision up to regional regulations	no
decision up to regional regulations	case to case decision	no	no		no	yes	no	yes	case to case decision	no		no	case to case decision
no	no	no	no		no	no	no	yes	no	no		no	no
no	no	no	no		no	no	no	no	no	no		no	
case to case decision	yes	no	no	no	no	no	no	no	no	no	no	no	no
decision up to regional regulations	no	no	decision up to regional regulations	yes	no	no	no	no	no	no	no	no	yes
no	yes				no	no	no	yes		yes	case to case decision	no	
no	yes	case to case decision	no	yes	no	no	no	no		yes	case to case decision	no	case to case decision
no	yes	case to case decision	no	case to case decision	no	no	no	no		yes	case to case decision	no	case to case decision
yes	yes	yes	yes	yes	no	yes	case to case decision	yes		yes	case to case decision	yes	yes
yes	yes	yes	no	yes	no	yes	no	yes		yes	case to case decision	case to case decision	case to case decision
yes	yes	no	no		no	yes	no	yes		yes	case to case decision	case to case decision	
yes	yes	no	no		no	yes	no	yes		yes	case to case decision	case to case decision	
no		no	no	case to case decision	no	case to case decision	case to case decision	no		yes	case to case decision	yes	yes
no	yes	no	no	case to case decision	no	no	no	no		yes	yes	no	case to case decision
no	yes	no	no	yes	no	no	no	yes		yes	case to case decision	no	case to case decision
		no	no										case to case decision

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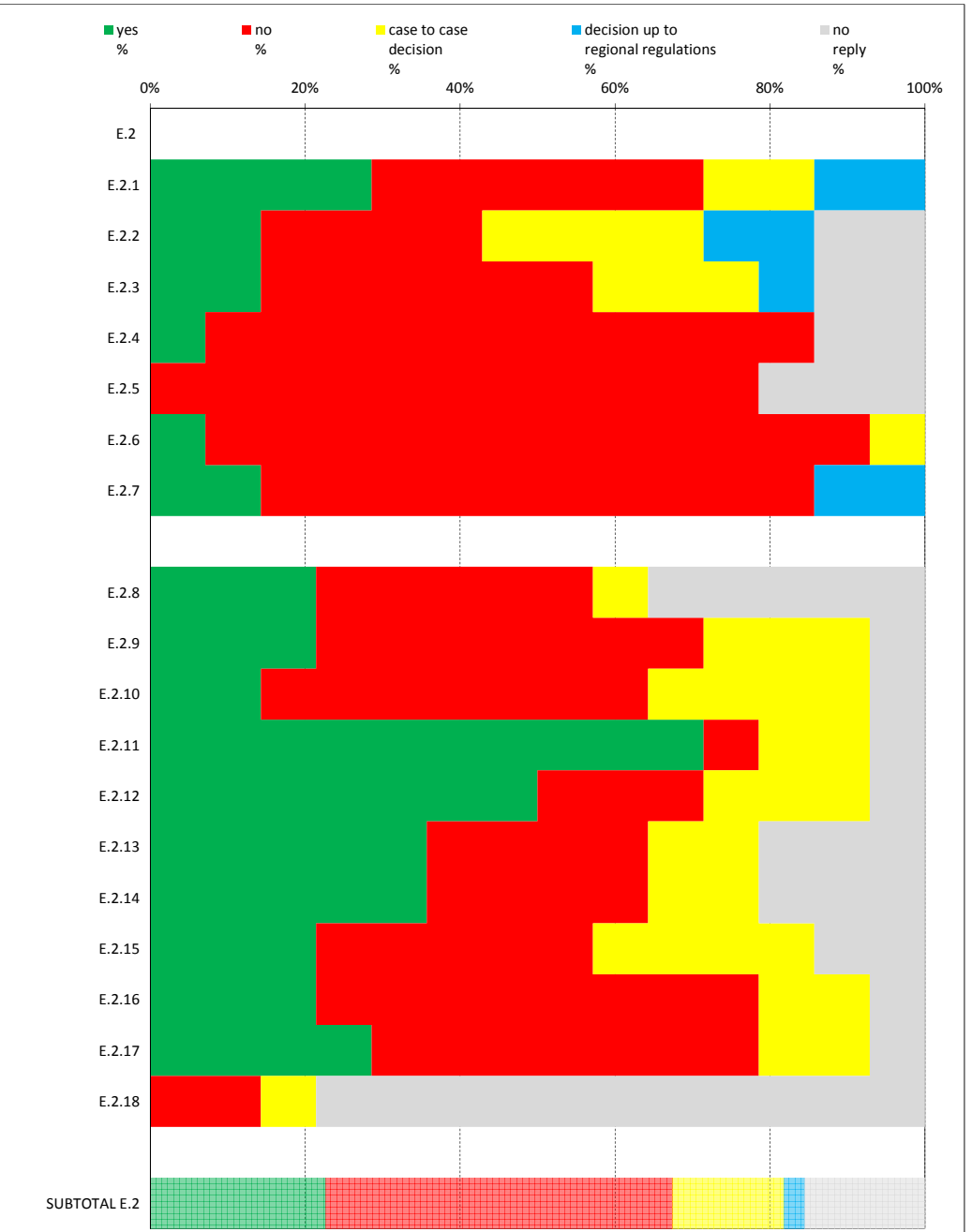
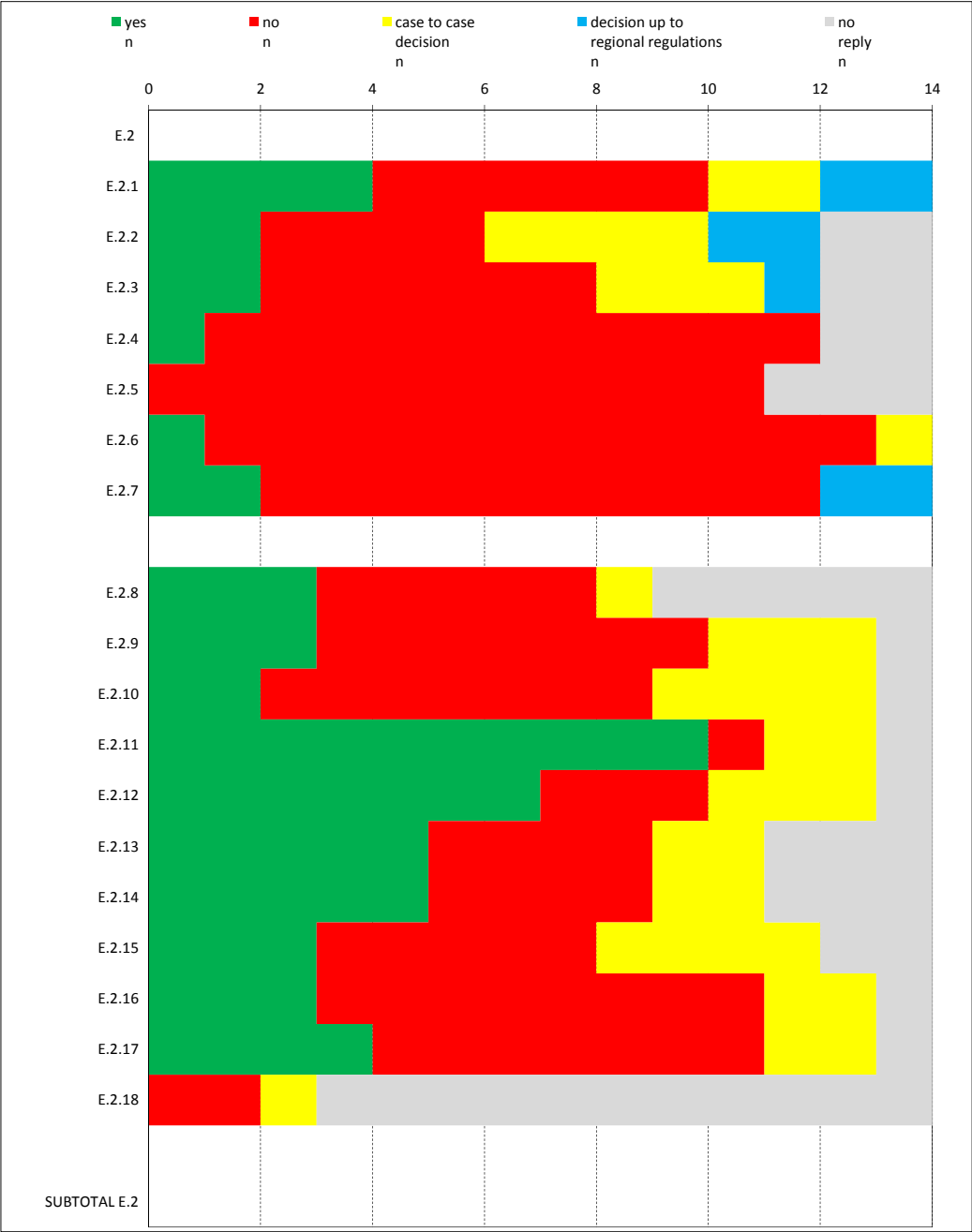
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E.2.7	If yes, are there any recommendations on monitoring of efficiency of SGE installations available?
	If yes, which parameters are monitored:
E.2.8	Heating/cooling installed capacity
E.2.9	Operating hours
E.2.10	Electricity consumption
E.2.11	Water extraction volume
E.2.12	Water injection volume
E.2.13	Temperature of extracted water
E.2.14	Temperature of injected water
E.2.15	Ground temperature
E.2.16	Heating/cooling medium temperature
E.2.17	Thermal energy production
E.2.18	Other
SUBTOTAL E.2	

yes n	no n	case to case decision n	decision up to regional regulations n	no reply n	total replies n	total respondents* n
4	6	2	2	0	14	14
2	4	4	2	2	12	14
2	6	3	1	2	12	14
1	11	0	0	2	12	14
0	11	0	0	3	11	14
1	12	1	0	0	14	14
2	10	0	2	0	14	14
3	5	1	0	5	9	14
3	7	3	0	1	13	14
2	7	4	0	1	13	14
10	1	2	0	1	13	14
7	3	3	0	1	13	14
5	4	2	0	3	11	14
5	4	2	0	3	11	14
3	5	4	0	2	12	14
3	8	2	0	1	13	14
4	7	2	0	1	13	14
0	2	1	0	11	3	14
57	113	36	7	39	213	252

yes %	no %	case to case decision %	decision up to regional regulations %	no reply %	total replies %	total respondents* %
28,57%	42,86%	14,29%	14,29%	0,00%	100,00%	100,00%
14,29%	28,57%	28,57%	14,29%	14,29%	85,71%	100,00%
14,29%	42,86%	21,43%	7,14%	14,29%	85,71%	100,00%
7,14%	78,57%	0,00%	0,00%	14,29%	85,71%	100,00%
0,00%	78,57%	0,00%	0,00%	21,43%	78,57%	100,00%
7,14%	85,71%	7,14%	0,00%	0,00%	100,00%	100,00%
14,29%	71,43%	0,00%	14,29%	0,00%	100,00%	100,00%
21,43%	35,71%	7,14%	0,00%	35,71%	64,29%	100,00%
21,43%	50,00%	21,43%	0,00%	7,14%	92,86%	100,00%
14,29%	50,00%	28,57%	0,00%	7,14%	92,86%	100,00%
71,43%	7,14%	14,29%	0,00%	7,14%	92,86%	100,00%
50,00%	21,43%	21,43%	0,00%	7,14%	92,86%	100,00%
35,71%	28,57%	14,29%	0,00%	21,43%	78,57%	100,00%
35,71%	28,57%	14,29%	0,00%	21,43%	78,57%	100,00%
21,43%	35,71%	28,57%	0,00%	14,29%	85,71%	100,00%
21,43%	57,14%	14,29%	0,00%	7,14%	92,86%	100,00%
28,57%	50,00%	14,29%	0,00%	7,14%	92,86%	100,00%
0,00%	14,29%	7,14%	0,00%	78,57%	21,43%	100,00%
22,62%	44,84%	14,29%	2,78%	15,48%	84,52%	100,00%

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E.2.4	If yes, do the authorities run a general digital database in which the monitoring data of the individual installations is stored?
E.2.5	If yes, are the monitoring results of the public buildings publically available?
E.2.6	If yes, is your GSO involved in monitoring of SGE installations?
E.2.7	If yes, are there any recommendations on monitoring of efficiency of SGE installations available?
	If yes, which parameters are monitored:
E.2.8	Heating/cooling installed capacity
E.2.9	Operating hours
E.2.10	Electricity consumption
E.2.11	Water extraction volume
E.2.12	Water injection volume
E.2.13	Temperature of extracted water
E.2.14	Temperature of injected water
E.2.15	Ground temperature
E.2.16	Heating/cooling medium temperature
E.2.17	Thermal energy production
E.2.18	Other
SUBTOTAL E.2	



Appendix V Results of partners’ questionnaire, part E, Register and monitoring of SGE installations

	Environmental monitoring of SGE installations
E.3	Are there any recommendations on environmental monitoring related to SGE installations (during all phases, e.g.: construction, operation)?
E.3.1	If yes , is environmental monitoring required in relation to SGE construction phase (e.g.: drilling, testing, etc.)?
E.3.2	If yes , is your GSO involved in environmental monitoring of SGE installations?
E.3.3	If yes , is installation of monitoring wells and/or piezometers for environmental monitoring of SGE installations required?
E.3.4	If yes , which parameters are monitored:
E.3.5	Groundwater head
E.3.6	Groundwater temperature
E.3.7	Physiochemical parameters of groundwater, e.g.: EC, TDS, pH, Eh, O2 conc., etc.
E.3.8	Chemical composition of groundwater
E.3.9	Contamination of groundwater, rocks and soils
E.3.10	Microbiota in groundwater, rocks and soils
E.3.11	Other
SUBTOTAL E.3	
TOTAL E.1 - E.3	

	P01 GBA AT	P02 NERC UK	P04 HGI-CGS HR	P05 CGS CZ	P06 BRGM FR	P07 GSI IE	P08 RBINS- GSB BE	P09 GeoZS SI	P10 IGME ES	P11 SGU SE	P12 TNO NL	P13 PIG-PIB PL	P14 SGIDS SK	P16 GEUS DK	
	Yes	Yes	no	no	yes	case to case decision	yes	yes	no	case to case decision	Yes	no	no	case to case decision	
	no	yes	case to case decision		yes	no	yes	case to case decision	no	case to case decision	yes	case to case decision	no	yes	
	yes	case to case decision	case to case decision		no	no	no	case to case decision	case to case decision	no	no	no	no	no	
	yes		no	no	no	no	no	case to case decision	decision up to regional regulations	case to case decision	yes	case to case decision	no	case to case decision	
	yes	case to case decision	no	no		no	yes	case to case decision	yes	yes	yes	yes	no	yes	
	yes	case to case decision	yes	no		no	yes	case to case decision	yes	yes	yes	case to case decision	no	yes	
	yes	case to case decision	yes	no		no	no	case to case decision	yes	no	yes	case to case decision	no	case to case decision	
	yes	case to case decision	yes	no		no	no	case to case decision	yes	case to case decision	yes	case to case decision	no	case to case decision	
	no	case to case decision	no	no		no	yes	case to case decision	no	no	yes	case to case decision	no	case to case decision	
	no	case to case decision	no	no		no	no	case to case decision	no	no	yes		no	case to case decision	
			no	no			yes			no					
	TOTAL														
	yes n	13	14	5	2	10	1	15	3	15	6	23	2	3	8
	no n	13	5	24	26	5	29	14	16	12	10	9	7	23	7
	case to case decision n	1	10	4	0	3	2	3	13	1	6	0	15	3	13
decision up to regional regulations n	5	0	0	1	0	0	0	0	1	0	0	0	3	1	
no reply n	2	5	1	5	16	2	2	2	5	12	2	10	2	5	
total replies n	32	29	33	29	18	32	32	32	29	22	32	24	32	29	
total respondents* n	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

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	Environmental monitoring of SGE installations
E.3	Are there any recommendations on environmental monitoring related to SGE installations (during all phases, e.g.: construction, operation)?
E.3.1	If yes , is environmental monitoring required in relation to SGE construction phase (e.g.: drilling, testing, etc.)?
E.3.2	If yes , is your GSO involved in environmental monitoring of SGE installations?
E.3.3	If yes , is installation of monitoring wells and/or piezometers for environmental monitoring of SGE installations required?
E.3.4	If yes , which parameters are monitored:
E.3.5	Groundwater head
E.3.6	Groundwater temperature
E.3.7	Physiochemical parameters of groundwater, e.g.: EC, TDS, pH, Eh, O2 conc., etc.
E.3.8	Chemical composition of groundwater
E.3.9	Contamination of groundwater, rocks and soils
E.3.10	Microbiota in groundwater, rocks and soils
E.3.11	Other
SUBTOTAL E.3	
TOTAL E.1 - E.3	

yes n	no n	case to case decision n	decision up to regional regulations n	no reply n	total replies n	total respondents* n
6	5	3	0	0	14	14
5	4	4	0	1	13	14
1	8	4	0	1	13	14
2	6	4	1	1	13	14
0	0	0	0	14	0	14
7	4	2	0	1	13	14
7	3	3	0	1	13	14
4	5	4	0	1	13	14
4	4	5	0	1	13	14
2	7	4	0	1	13	14
1	8	3	0	2	12	14
1	3	0	0	10	4	14
40	57	36	1	34	134	168
TOTAL	120	200	74	11	85	405
120						
200						
74						
11						
71						
405						
14						

yes %	no %	case to case decision %	decision up to regional regulations %	no reply %	total replies %	total respondents* %
42,86%	35,71%	21,43%	0,00%	0,00%	100,00%	100,00%
35,71%	28,57%	28,57%	0,00%	7,14%	92,86%	100,00%
7,14%	57,14%	28,57%	0,00%	7,14%	92,86%	100,00%
14,29%	42,86%	28,57%	7,14%	7,14%	92,86%	100,00%
0,00%	0,00%	0,00%	0,00%	100,00%	0,00%	100,00%
50,00%	28,57%	14,29%	0,00%	7,14%	92,86%	100,00%
50,00%	21,43%	21,43%	0,00%	7,14%	92,86%	100,00%
28,57%	35,71%	28,57%	0,00%	7,14%	92,86%	100,00%
28,57%	28,57%	35,71%	0,00%	7,14%	92,86%	100,00%
14,29%	50,00%	28,57%	0,00%	7,14%	92,86%	100,00%
7,14%	57,14%	21,43%	0,00%	14,29%	85,71%	100,00%
7,14%	21,43%	0,00%	0,00%	71,43%	28,57%	100,00%
23,81%	33,93%	21,43%	0,60%	20,24%	79,76%	100,00%
24,49%	40,82%	15,10%	2,24%	17,35%	82,65%	100,00%

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E.3.6	Groundwater temperature
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E.3.10	Microbiota in groundwater, rocks and soils
E.3.11	Other
SUBTOTAL E.3	
TOTAL E.1 - E.3	

