Survey results

Study on the trends in terms of investments, jobs and turnover in the Fuel cells and Hydrogen sector

October 5th, 2012

Survey response Monday Oct 1st

Response rate (%)

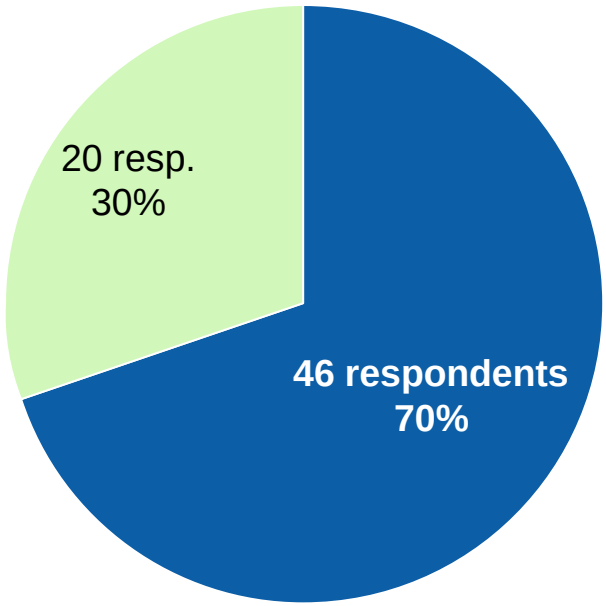
Survey Completed

Survey not completed

Status survey 1: Industrial Grouping

Unique organisations

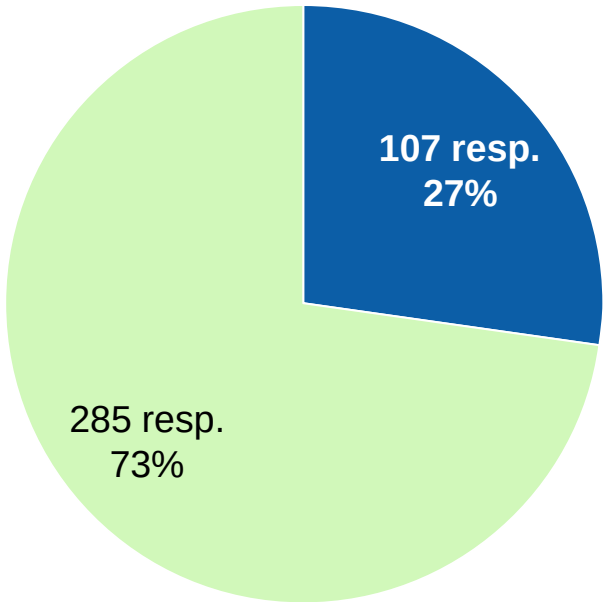
100% = 66



Status survey 2: Beneficiaries

Unique organisations

100% = 392



SOURCE: FCH JU survey

List of participating industrial groupings, which completed the survey and agreed to sharing their name

- Abengoa Hidrógeno
- Adelan
- Advanced Energy Technologies
- AFC Energy
- Air Liquide
- Air Products
- Alstom
- CETH2
- Daimler
- EFCF
- Electro power systems
- Green Vision / HyGear
- H2 Logic
- Honda R&D Europe (Deutschland)
- Hydrogenics
- HyET
- Hyundai Motor Company
- Iberdrola
- INEA
- Institut Pierre vernier
- Intelligent Energy
- IRD
- ITM Power
- Johnson Matthey
- LBST
- MES
- Nedstack
- NuCellSys
- Powercell Sweden
- Riversimple
- Shell
- SolviCore
- Sunfire
- Topsoe Fuel cell
- Umicore AG&Co KG
- Vattenfall
- Wärtsilä

SOURCE: FCH JU survey

List of participating beneficiaries, which completed the survey and agreed to sharing their name

Companies

- 1515
- Ballard Power Systems
- Bitron
- British Gas
- DBI - Gastechnologisches Institut gGmbH Freiberg
- Domel
- DONG Energy A/S
- ElringKlinger AG
- GETT Fuel Cells International AB
- Hexagon Composites ASA
- hySOLUTIONS GmbH
- IHT
- INOVA+
- Ion Power
- Madden
- MARION TECHNOLOGIES
- MBN nanomaterialia
- PAXITECH
- PLANET GbR
- Riesaer Brennstoffzellentechnik GmbH
- Riviera Trasporti spa
- serenergy
- synergesis consult.ing
- TecnimontKT Spa
- TÜV SÜD Industrie Service GmbH
- VAN HOOL N. V.
- Vattenfall Europe Innovation GmbH
- Vestel Savunma Sanayi A.S.

Research organisations

- Aalborg University
- Aalto university
- AIJU
- CEA
- Centre for Researcha and Technology Hellas
- CENTRO SVILUPPO MATERIALI CSM
- CIRPS- Sapienza
- CNRS Montpellier
- CPERI/CERTH
- DTU
- EIFER
- ENEA
- Fondazione Bruno Kessler
- FORTH/ICE-HT
- Fraunhofer ISE
- Fundacion Hidrogeno Aragon
- Gas- und Wärme-Institut Essen e.V.
- German Aerospace Center
- Helmholtz-Zentrum Geesthacht
- Institut für Mikrotechnik Mainz GmbH
- Institute for Energetics and Interphases (IENI-CNR)
- Institute for Energy Technology
- Institute of High Temperature Electrochemistry
- Instytut Chemii Przemyslowej im. prof. Ignacego Moscickiego
- INTA
- Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano" of Consiglio Nazionale delle Ricerche
- Karlsruher Institut für Technologie, Institut für Werkstoffe der Elektrotechnik
- Lucerne University of Applied Sciences and Arts
- Matres scrl
- NEXT ENERGY - EWE-Forschungszentrum für Energietechnologie e. V.
- Paul Scherrer Institut
- Politecnico di Torino
- SINTEF
- Swerea IVF
- TECNALIA
- Università di Torino
- University of Birmingham
- University of La Laguna
- University of Perugia
- University of Salerno
- University of Stuttgart, LBP
- University of Ulster
- Vienna University of Technology
- VTT
- West Pomeranian University of Technology, Szczecin

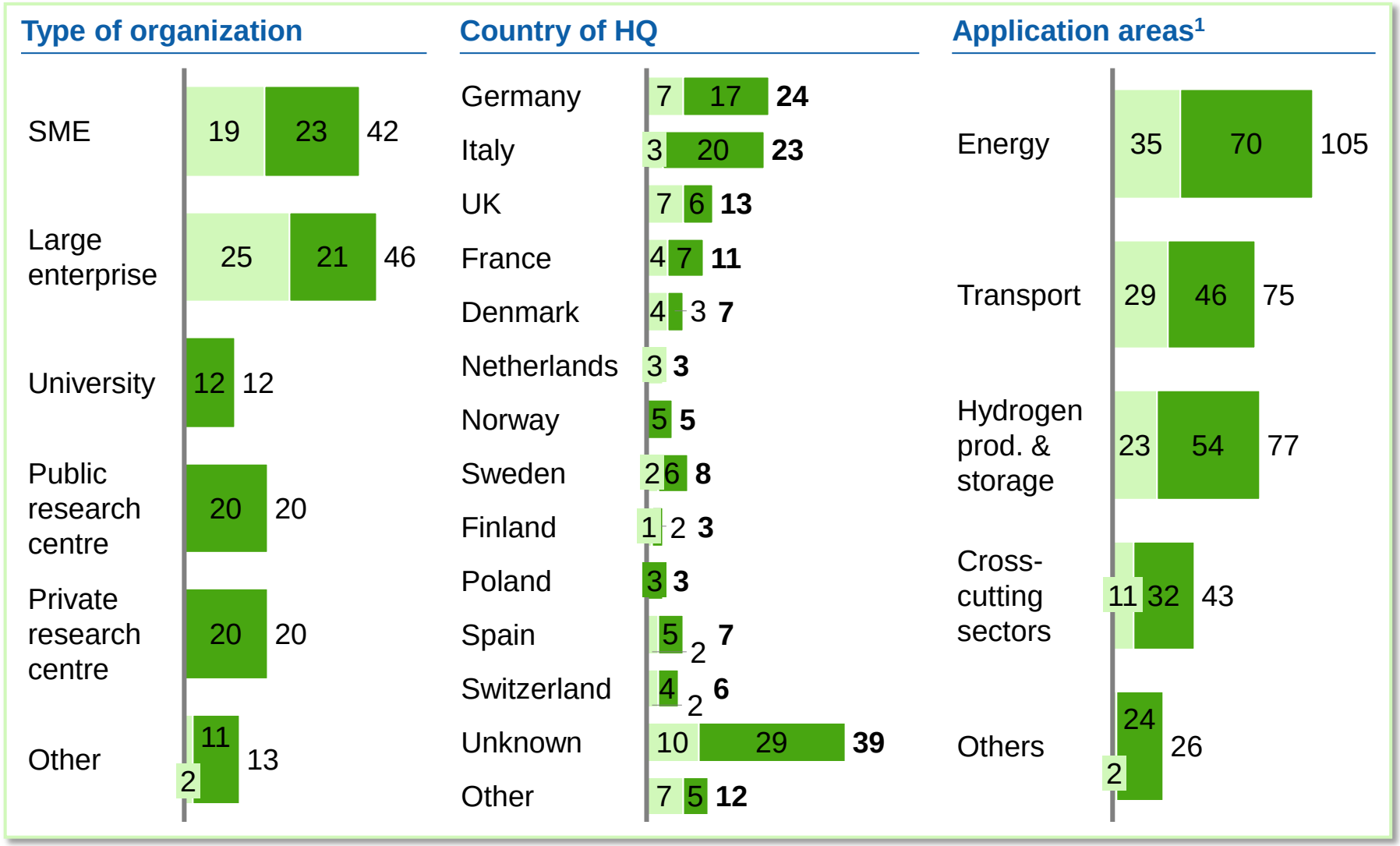
Others

- Aberdeen City Council
- ARMINES
- Birmingham city council
- FAST
- Hydrogen Sweden
- International Center for Hydrogen Energy Technologies (ICHET)
- Transport for London
- WaterstofNet

SOURCE: FCH JU survey

Respondents represent the entire industry

Number of responses, N = 46 (IG), N = 107 (Beneficiaries)



1 More than 1 one application area can apply to one organization

SOURCE: FCH JU survey

More than half of the respondents saw an increase in annual turnover in the FC&H sector of more than 10% per year from 2007 to 2011/12

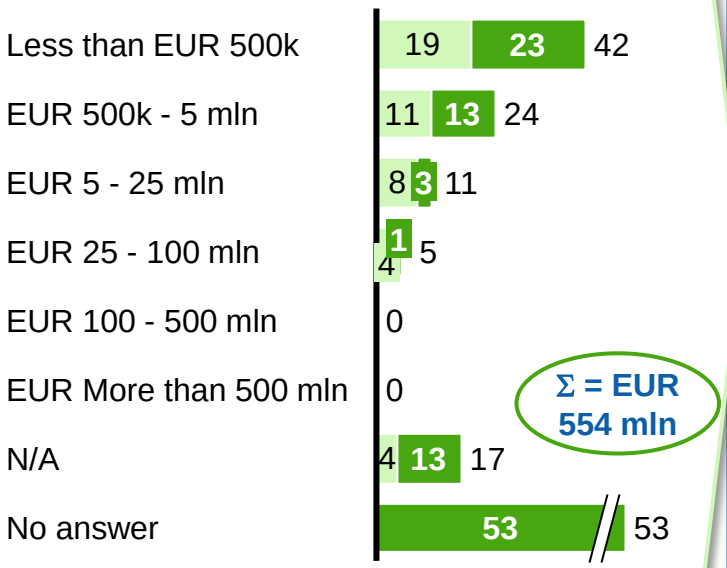
2007-12

N = 46 (IG), N = 107 (Beneficiaries)

Industry Grouping | Beneficiaries | XX% Average CAGR 2007-2011/12

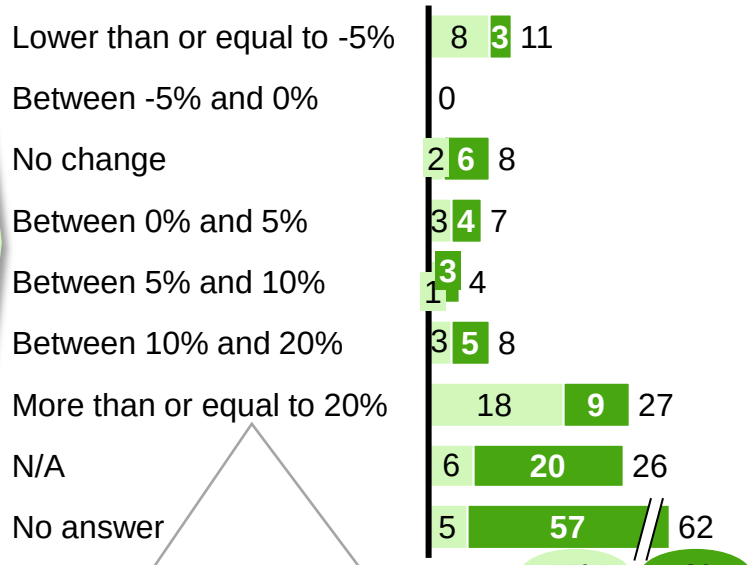
Annual turnover[3] of respondents, 2011/12[1]

Number of responses



Change in turnover[3] between 2007 and 2011/12[1]

Number of responses with indicated CAGR[2]



Of these 27, 6 had a turnover of less than EUR 0.5 mln in 2011/12, 10 a turnover of 0.5-5 mln, 8 a turnover of 5-25 mln, and 2 companies with a turnover higher than EUR 25 mln. 1 turnover is unknown.

Question I.1.1.1 What is your latest (commercial) annual turnover on FC&H technologies? N/a for research organisations.
Question I.1.1.3 What was your annual turnover in 2007 on FC&H technologies? If you cannot provide it, what was the average annual growth since 2007 of FC&H turnover? If your organization was started after 2007, please indicate your growth since the start year

1 Latest year provided
2 Compound Annual Growth Rate
3 Annual turnover for the FC&H activities only, excluding hydrogen activities unrelated to fuel cells

SOURCE: FCH JU survey

41% of the respondents saw an increase in annual R&D expenditures in the FC&H sector of more than 10% per year from 2007 to 2011/12

N = 46 (IG), N = 107 (Beneficiaries)

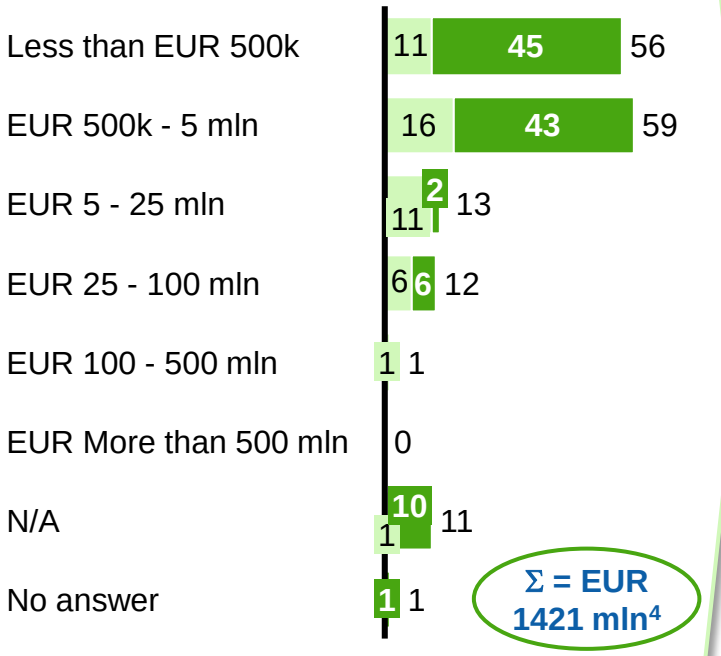
2007-12

New Energy World JU
fuel cells & hydrogen for sustainability

Industrial Grouping | Beneficiaries | XX% Average CAGR 2007-2011/12

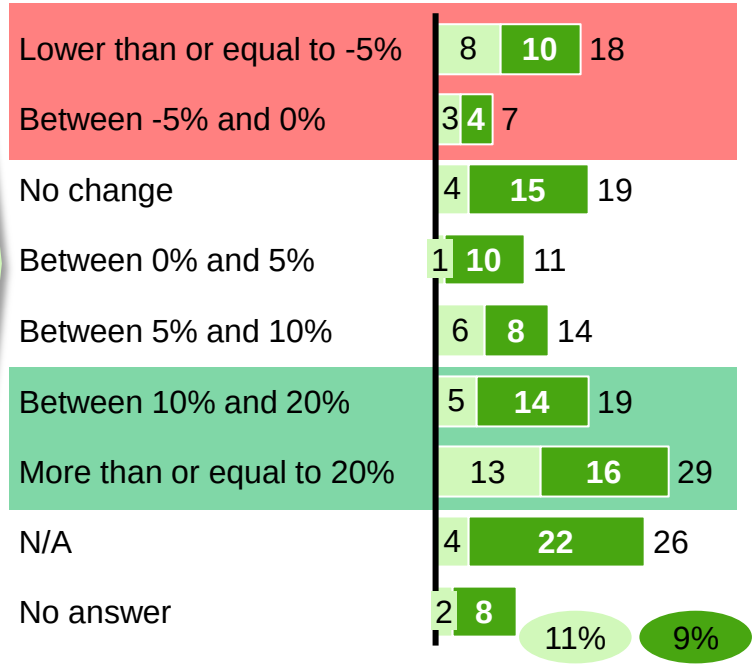
Annual R&D expenditures[3] of respondents, 2011/12[1]

Number of responses



Change in R&D expenditures[3] 2007-11/12[1]

CAGR[2]



Question I.1.2.1 How much do you currently spend annually on research for FC&H technologies? If you are a research centre, please provide your current annual budget for FC&H research
Question I.1.2.3 What was your spend on research/budget for FC&H technologies in 2007? If you cannot provide it, what was the average annual growth since 2007 of FC&H research spend/budget? If your organization was started after 2007, please indicate your growth since the start year

1 Latest year provided
2 Compound Annual Growth Rate
3 Annual expenditures on FC&H activities only, excluding hydrogen activities unrelated to fuel cells
4 See pages 10 and 11

SOURCE: FCH JU survey

28% of the respondents saw an increase in annual Market introduction/ deployment expenditures in the FC&H sector of more than 10% per year from 2007 to 2011/12

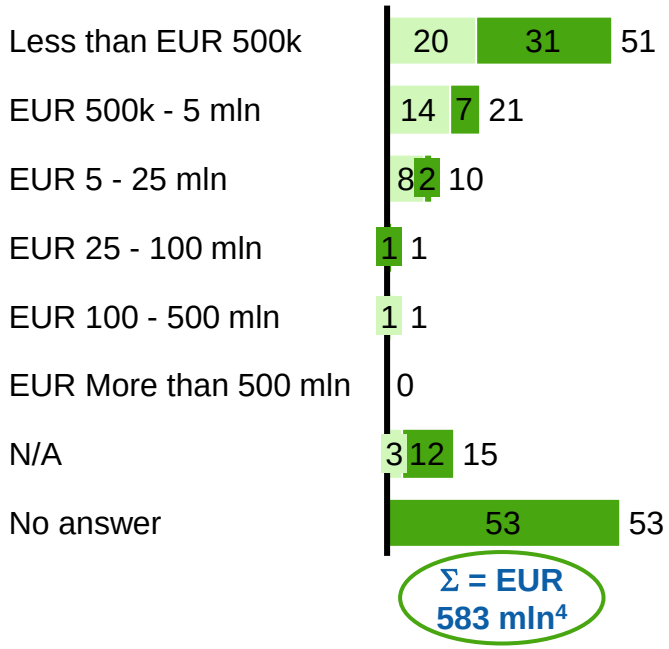
2007-12

N = 46 (IG), N = 107 (Beneficiaries)

Industrial Grouping | Beneficiaries | XX% Average CAGR 2007-2011/12

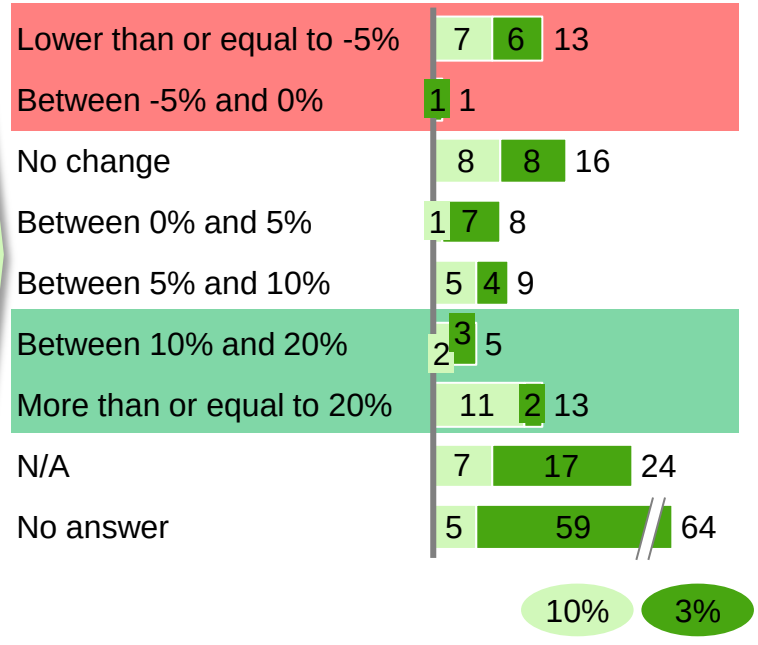
Annual market introduction expenditures[3] of respondents, 2011/12[1]

Number of responses



Change in expenditures[3] on market introduction/deployment 2007-11/12[1]

CAGR[2]



Question I.1.3.1 How much do you currently spend annually on market-introduction/deployment related activities for FC&H related technologies?
Question I.1.3.3 What were the FC&H expenditures on market-introduction/deployment related activities in 2007? If you cannot provide it, what was the average annual growth since 2007 of FC&H market-introduction/deployment expenditures?

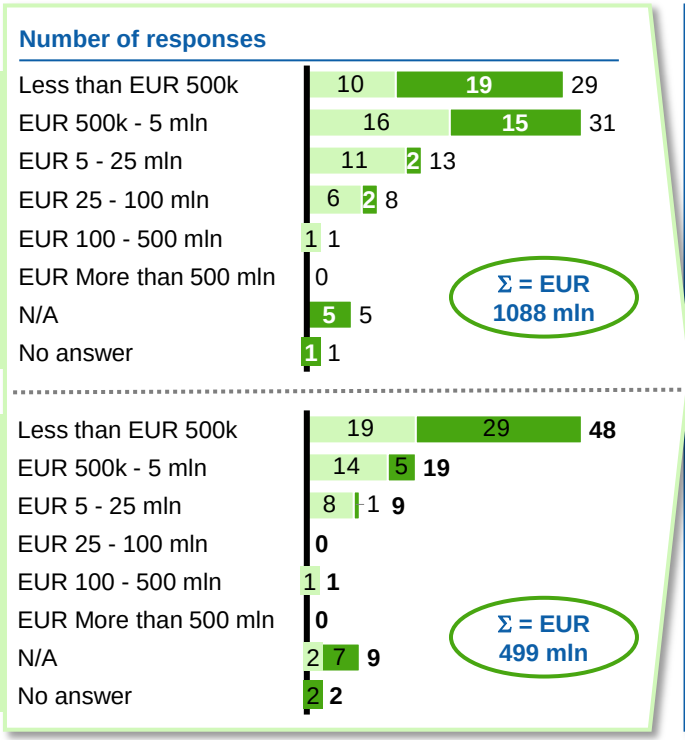
1 Latest year provided
2 Compound Annual Growth Rate
3 Annual expenditures on FC&H activities only, excluding hydrogen activities unrelated to fuel cells
4 See pages 10 and 11

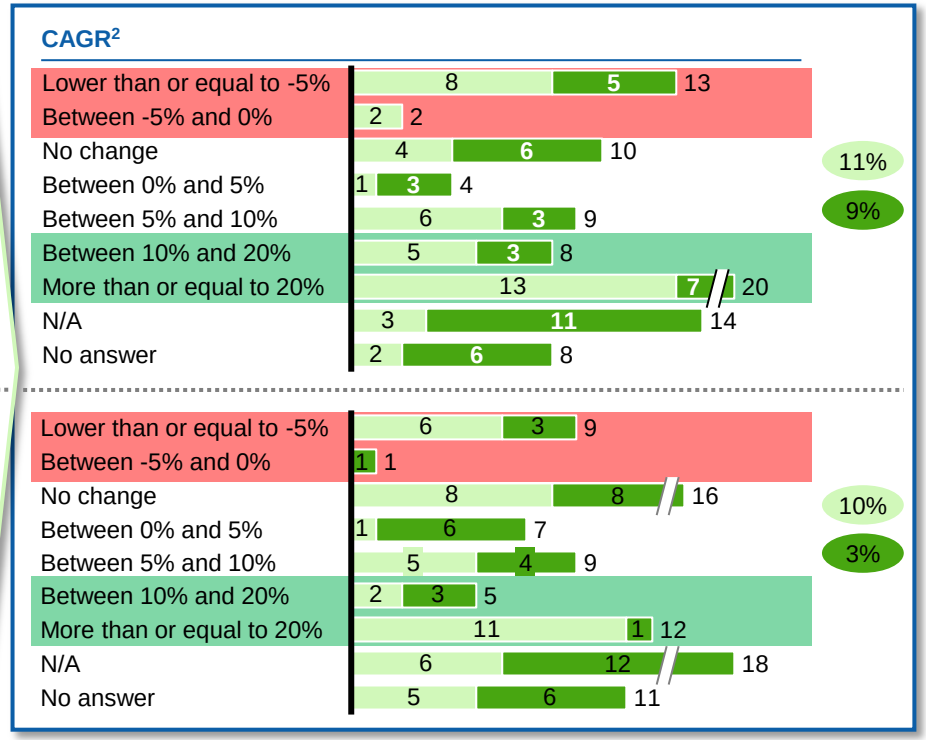
SOURCE: FCH JU survey

36% of the private respondents saw an increase in annual RD&D expenditures in the FC&H sector of more than 10% per year from 2007 to 2011/12

N = 44 (IG), N = 44 (Beneficiaries)

Annual R&D expenditures[3] of private respondents, 2011/12[1]





Annual market introduction expenditures[3] of private respondents, 2011/12[1]

Question I.1.2.1: How much do you currently spend annually on research for FC&H technologies? If you are a research centre, please provide your current annual budget for FC&H research

Question I.1.2.3: What was your spend on research/budget for FC&H technologies in 2007? If you cannot provide it, what was the average annual growth since 2007 of FC&H research spend/budget? If your organization was started after 2007, please indicate your growth since the start year

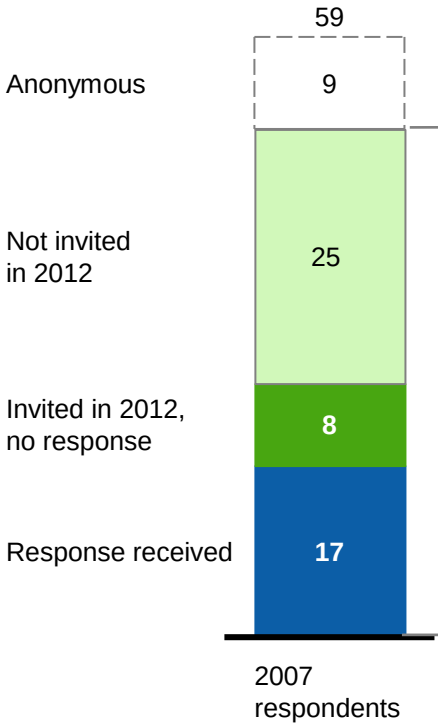
Question I.1.3.1: How much do you currently spend annually on market-introduction/deployment related activities for FC&H related technologies?

Question I.1.3.3: What were the FC&H expenditures on market-introduction/deployment related activities in 2007? If you cannot provide it, what was the average annual growth since 2007 of FC&H market-introduction/deployment expenditures?

1 Latest year provided
2 Compound Annual Growth Rate
3 Annual expenditures on FC&H activities only, excluding hydrogen activities unrelated to fuel cells

SOURCE: FCH JU survey

The surveys of 2007 and 2012 are not consistent, and a direct "apple to apple" comparison is not feasible



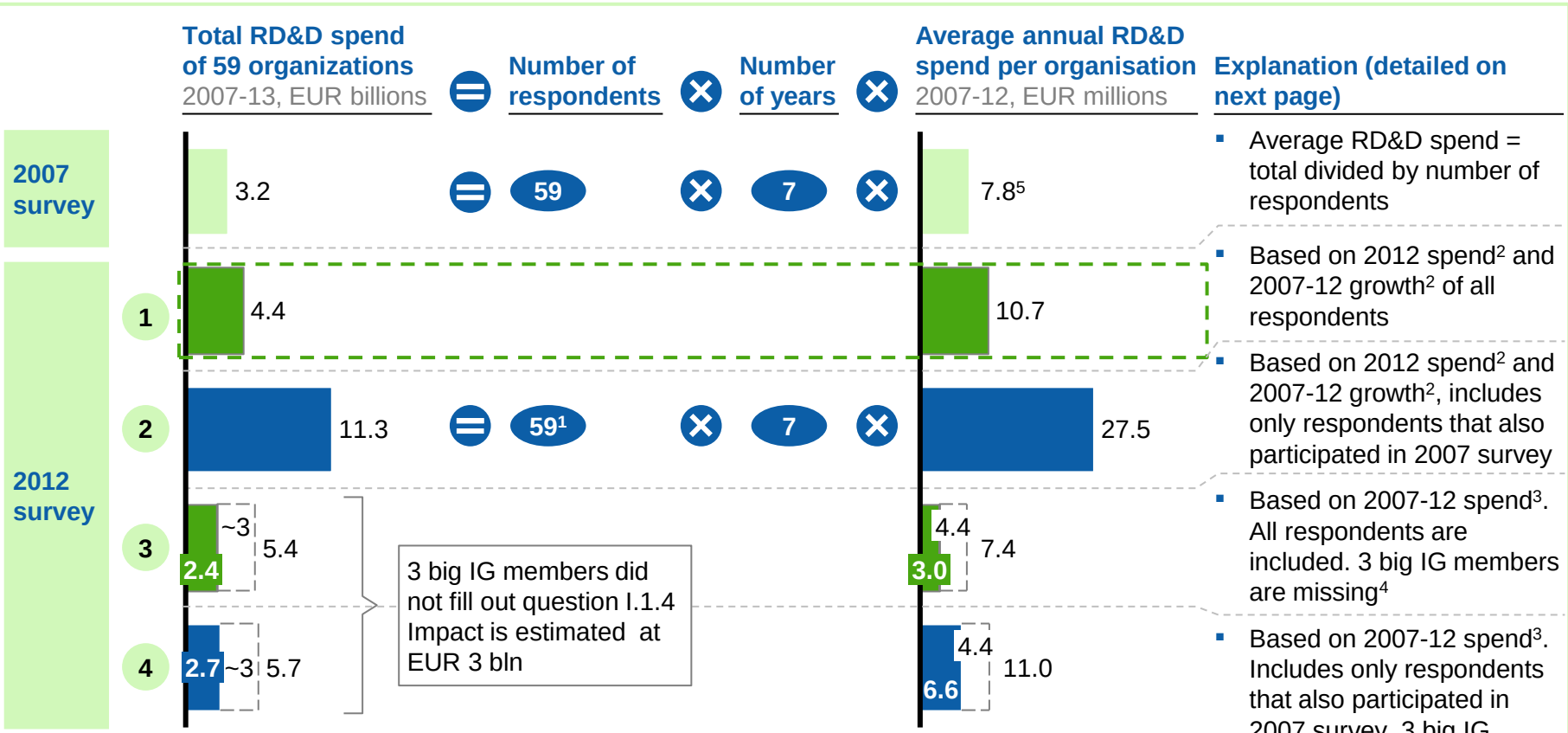
Response received
Invited no response
Not invited

ACCIONA ENERGÍA, S. A.	✗	hySOLUTIONS GmbH	✓
Adelan Ltd	✓	Intelligent Energy	✓
Air Products	✓	Labor Srl	✗
Athens Urban Transport Organization (OASA)	✗	Magna Steyr	✗
AVL List GmbH	✓	Magneti	✗
BESEL SA	✗	Nedstack	✓
BMW Group	✗	Nucellsys	✓
Bryte Energy Ltd	✗	PEMEAS Fuel Cell Technologies	✗
DaimlerChrysler	✓	PowerCell AB	✓
DemirDöküm	✗	Rolls Royce	✓
DutchCell b.v.	✗	Saati Group	✗
E.ON	✓	Saint-Gobain High Performance Materials	✓
Energia	✗	Shell Hydrogen	✓
Eni	✗	SOFCpower S.r.l. (Italy)	✓
Evalue srl	✗	TEMSA A.Ş	✗
EWE Aktiengesellschaft	✓	The Linde Group	✓
FIAT Research Centre	✓	Topsoe Fuel Cell A/S	✓
Fuel Cell Control	✗	Total	✓
Fuel Cell Materials, Saati Group	✗	Tropical S.A.	✗
Gaz de France	✗	Umicore AG & Co KG	✓
General Motors Europe	✓	Vaillant	✗
H2logic	✓	Volkswagen AG	✓
HELBIO S.A. Hydrogen & Energy Production Systems	✗	Voller Energy	✗
Hydro	✗	Vossloh Spain	✗
Hynergreen	✓	Wartsila	✓

Source: FCH JU survey; Industry submission to IA 2007, Kellen Europe

If we would have to compare figures, there are 4 possibilities

Estimate of missing IG members | Only 2012 respondents that also completed 2007 survey | All 2012 respondents



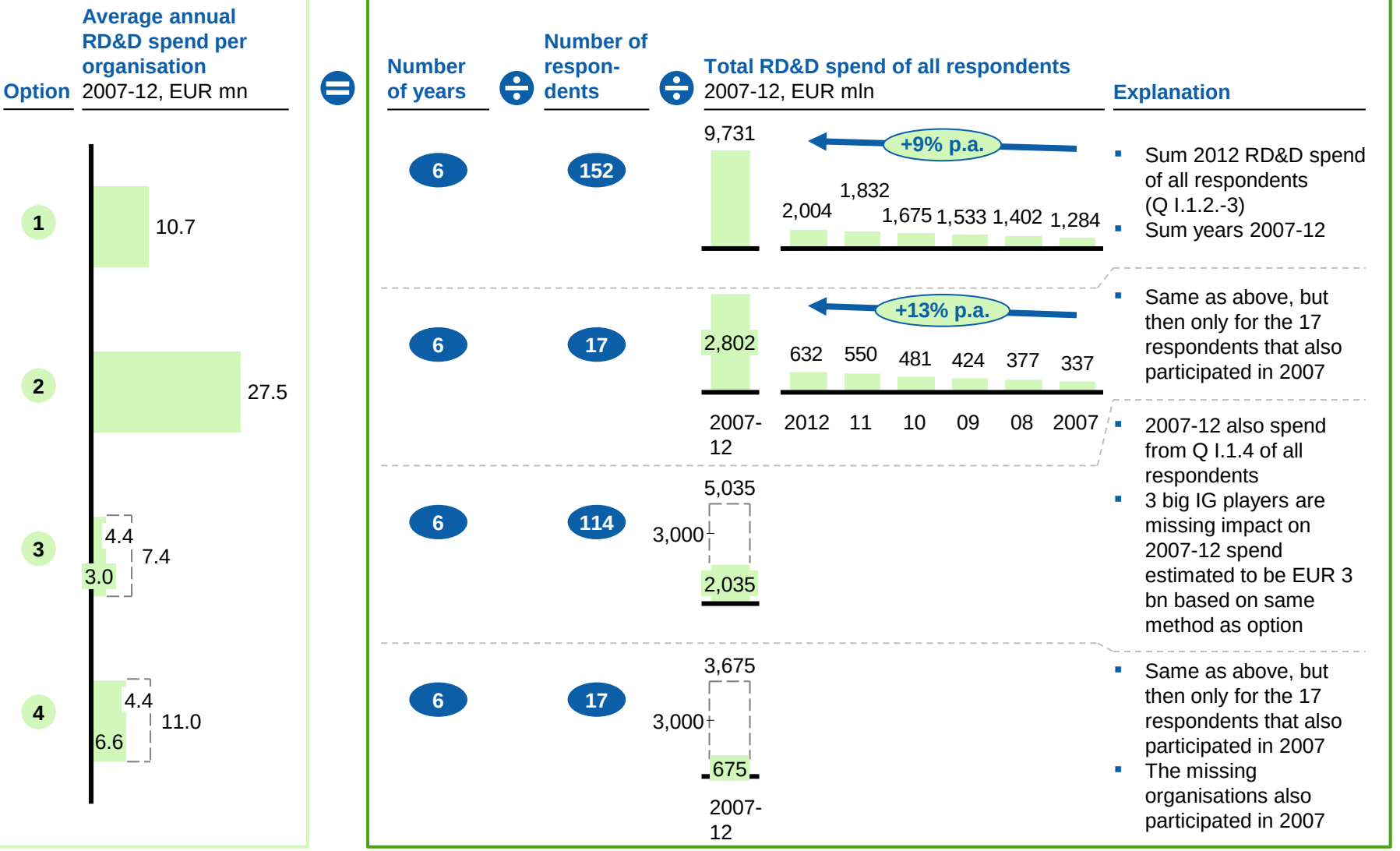
Option 1 is preferred:

- Options 2 and 4 are biased upward because companies that responded in both 2007 and 2012 are big companies
- Options 3 and 4 are biased downward because some big players did not answer survey question I.1.4

1 Although the 2012 survey had a different number of respondents, we took 59 in order to compare to the 2007 survey
2 Survey question I.1.2-3 3 Survey question I.1.4 4 Daimler, Siemens, and Enel 5 2007-13 average

Source: FCH JU survey; Industry submission to IA 2007, Kellen Europe

Calculation of average annual RD&D spend per organisation over 2007-12



Source: FCH JU survey

R&D and Market introduction/deployment expenditures in the FC&H sector of respondents focus on transport in the EU

2007-12

Percentage of the total expenditure from 2007 till 2012

>25% | 15%-25% | 10%-15% | 5%-10% | 1%-5% | 0%

N = 39 (IG), N = 75 (Beneficiaries)

	Transport	Energy	H_2 production and storage	Cross-cutting	Other		
EU	40%	18%	9%	1%	1%	=	68%
US	11%	2%	0%	0%	0%	=	13%
Japan	1%	1%	0%	0%	0%	=	1%
Korea	11%[1]	0%	0%	0%	1%	=	12%
China	0%	1%	0%	0%	0%	=	1%
Other	2%	2%	0%	0%	0%	=	4%
	=	=	=	=	=		
	65%	22%	9%	1%	2%		**100% = EUR 2.0 bln[2]**

Question I.1.4.1 What were your TOTAL FC&H expenditures over the period 2007-2012? The TOTAL FC&H expenditure are the FC&H R&D and market introduction/deployment expenditures. For research institutes, the TOTAL FC&H expenditures is the FC&H research budget. If an exact number is not available, please give your best estimate.
Question I.1.4.2 Please provide the breakdown of the TOTAL FC&H expenditures over 2007-2012 (as given above) by application and region. Only give the breakdowns for the regions in which you are active. The total calculated in the bottom-right cell should be 100%. If exact numbers are not available, please give your best estimate.

1 16% for Transport – Korea is caused by player

2 See pages 10 and 11

SOURCE: FCH JU survey

Total employment of respondents increased at 6% per year from 2007-2012, although 73% still employ less than 25 FTE in 2012

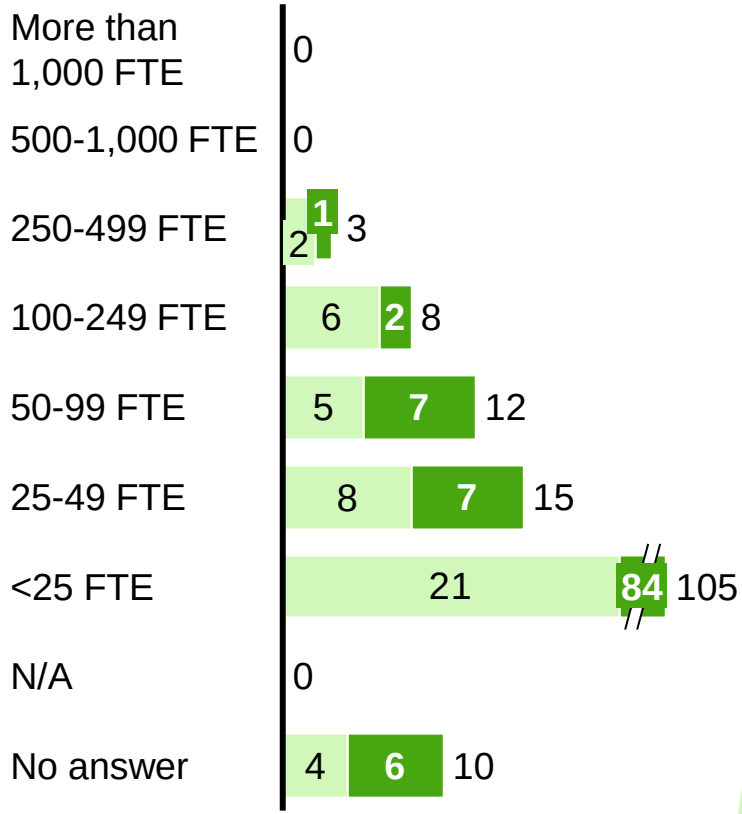
N = 46 (IG), N = 107 (Beneficiaries)

2007-12

Industry Grouping Beneficiaries

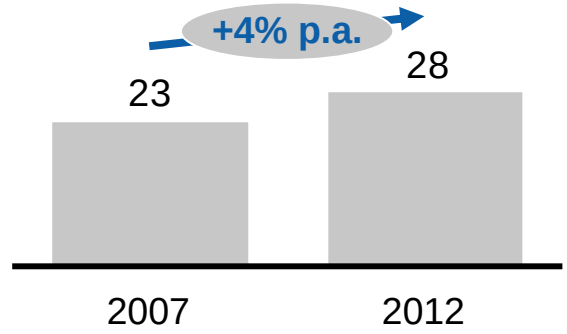
Size of organizations today

Number of responses



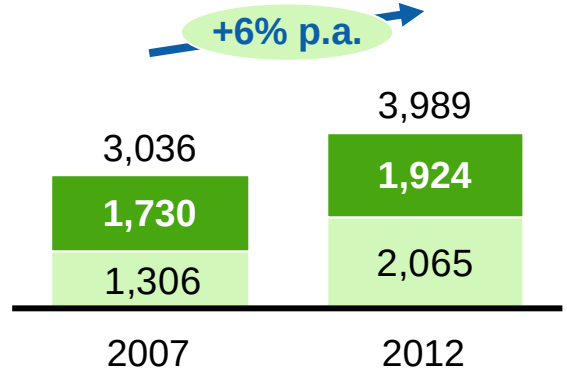
Average number of people per organization

Number of FTE



Total number of people in all organizations

Number of FTE



Question I.2.1. How many people (FTE) does your organisation employ in the FC&H sector today (2012)?
Question I.2.2. How many people (FTE) did your organisation employ in the FC&H sector in 2007?

SOURCE: FCH JU survey

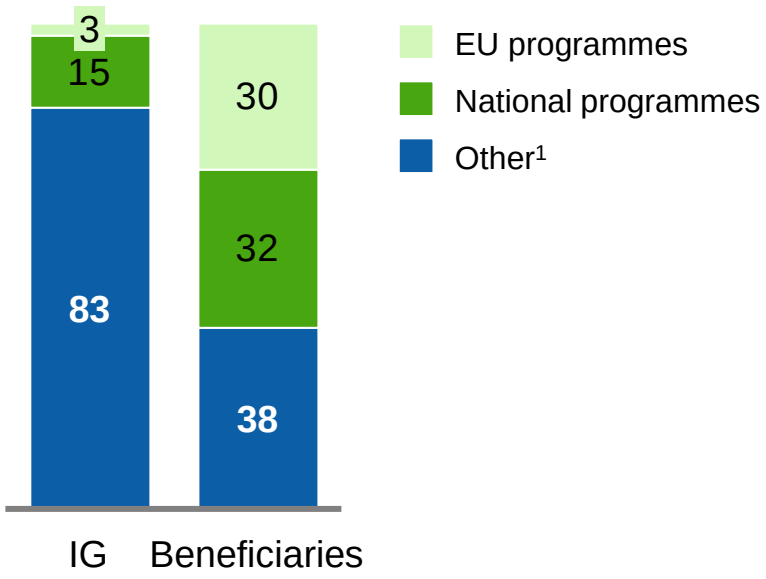
Although most respondents get the largest part of their budget from other sources than EU/national programmes, the establishment of FCH JU has had a positive effect on R&D expenditures/budget

2007-12

Origin of budget for R&D and market introduction/deployment expenditures

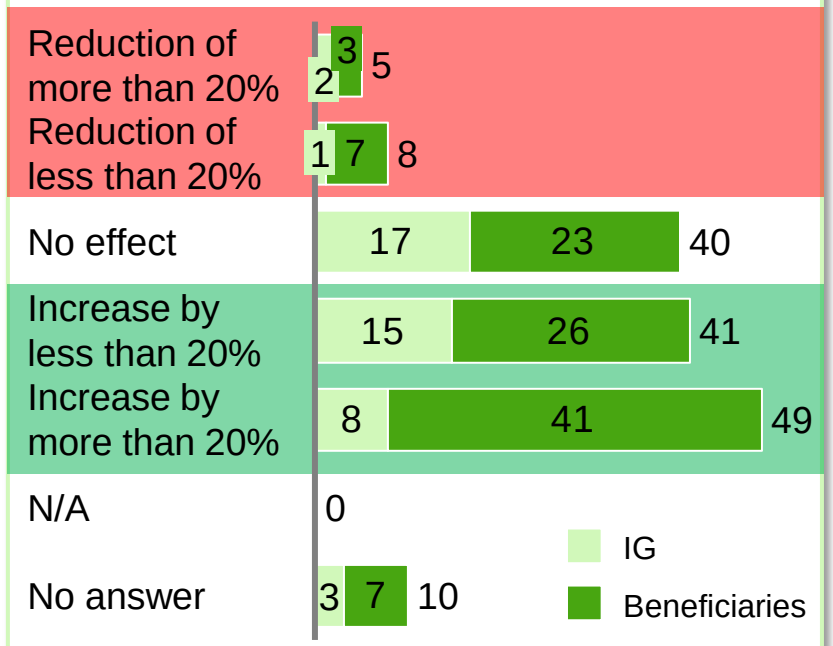
Percentage

N = 35 (IG), N = 75 (Beneficiaries)



Effect on R&D expenditures/budget caused by establishment FCH JU

N = 46 (IG), N = 107 (Beneficiaries)



Question I.3.1. What average percentage of your TOTAL FC&H expenditures (on R&D and market introduction)/budget was financed by EU programmes from 2007-2012 (FCH JU or European Commission)?
Question I.3.2. What average percentage of your TOTAL FC&H expenditures (on R&D and market introduction)/budget was financed by national programmes from 2007-2012?
Question I.3.3. Compared to your current spend/budget on research for FC&H technologies: Can you provide an estimation of the total additional/reduced amount you invest in R&D on FC&H technologies as a result of the establishment of the FCH JU over the period 2007 - 2013?

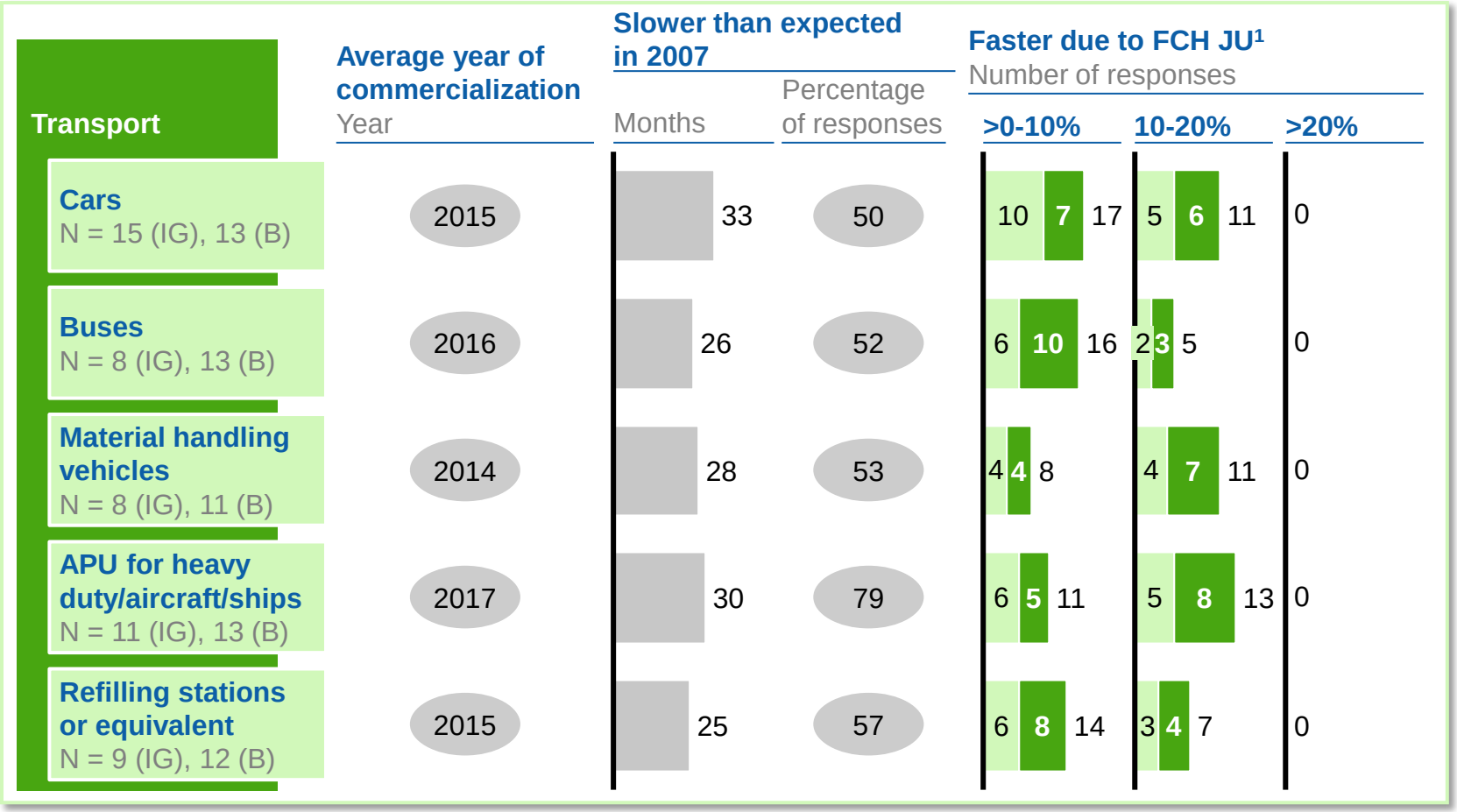
1 Mainly private

SOURCE: FCH JU survey

Respondents expect commercialization of Transport technology in the coming 2-5 years

Industry Grouping
Beneficiaries
Combined

2007-12



Question I.4.1. When do you expect your product(s)/application(s)/research project(s) to be commercialised (please split by product line)?
Question I.4.2. How has this timeframe evolved since 2007? Insert a positive number when it took longer than expected and a negative number if it took less time than expected.
Question I.4.3. To your opinion, has the time-to-market of your commercial products/applications decreased thanks to the establishment of the FCH JU?
Question I.4.4. If the time-to-market has decreased thanks to the FCH JU, can you provide an estimation of the time reduction, by product line?

1 Note that respondents can think the FCH JU sped up commercialisation, and also believe that, overall, commercialisation is still slower than expected in 2007

SOURCE: FCH JU survey

Respondents expect commercialization of Energy technology in the coming 1-5 years

Industry Grouping
Beneficiaries
Combined

2007-12

Question I.4.1. When do you expect your product(s)/application(s)/research project(s) to be commercialised (please split by product line)?
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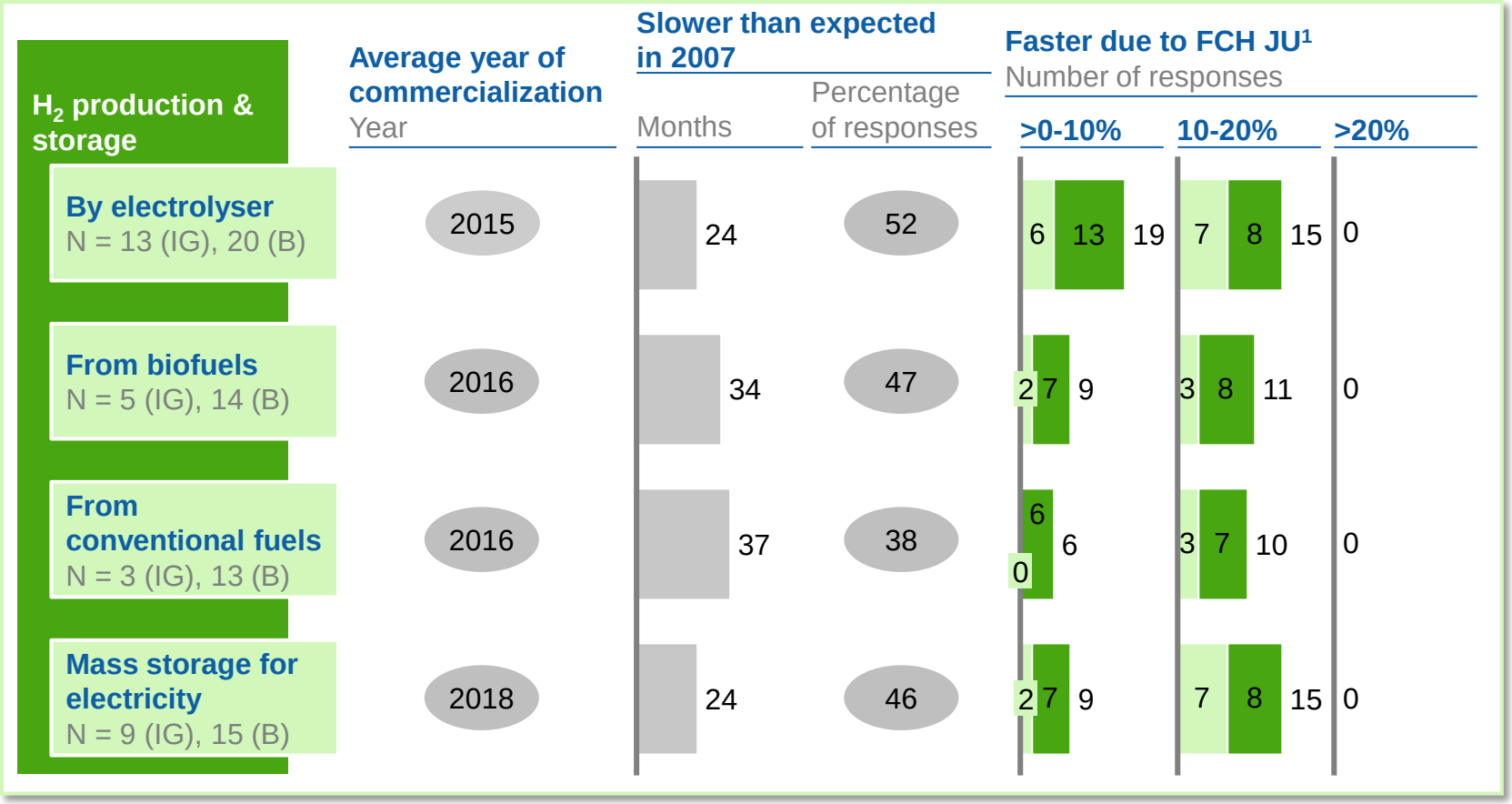
1 Note that respondents can think the FCH JU sped up commercialisation, and also believe that, overall, commercialisation is still slower than expected in 2007

SOURCE: FCH JU survey

Respondents expect commercialization of H_2 production[1] in 3-6 years

Industry Grouping
Beneficiaries
Combined

2007-12



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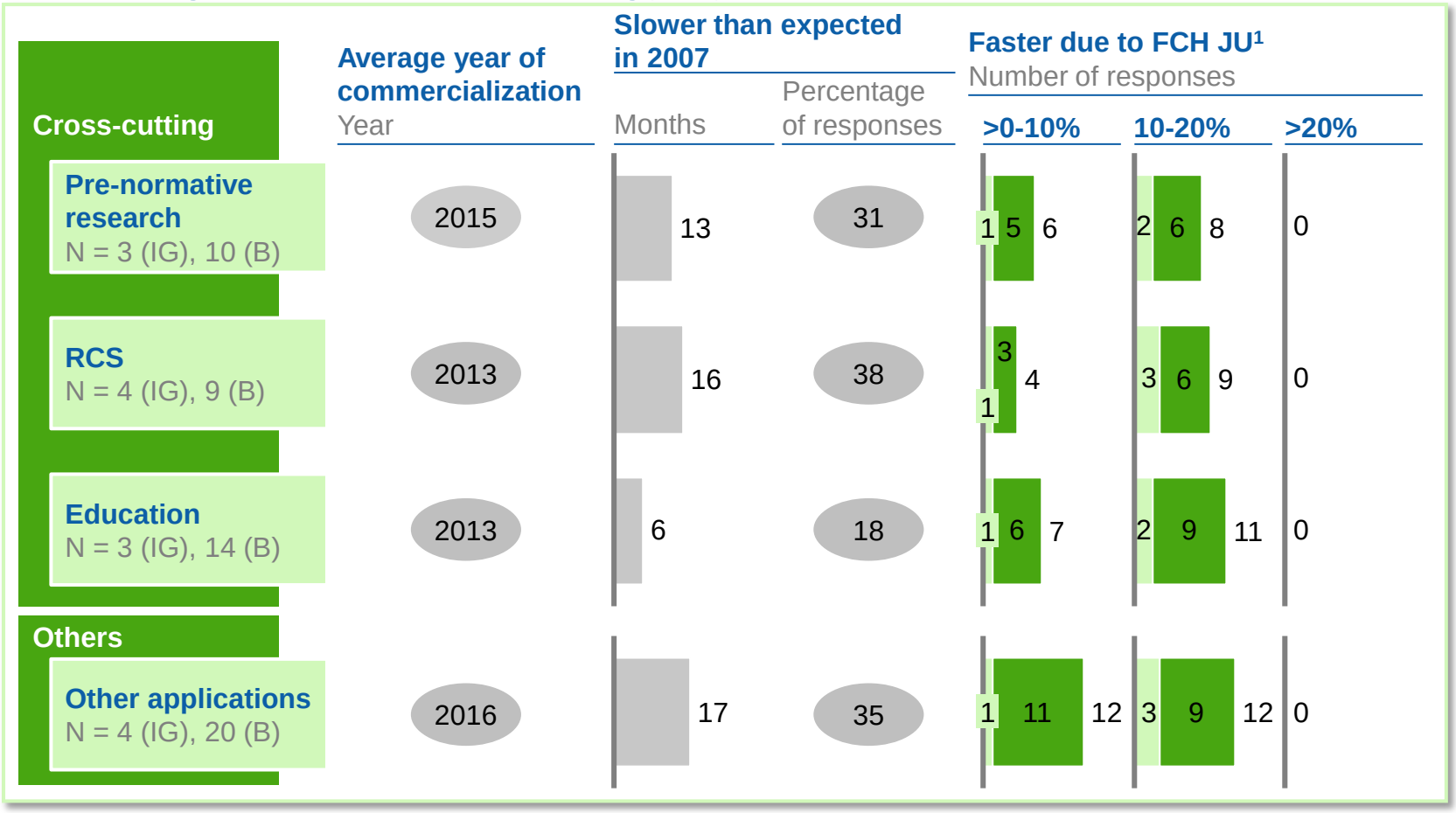
Question I.4.4. If the time-to-market has decreased thanks to the FCH JU, can you provide an estimation of the time reduction, by product line?

1 Except Mass storage for electricity2
2 Note that respondents can think the FCH JU sped up commercialisation, and also believe that, overall, commercialisation is still slower than expected in 2007

SOURCE: FCH JU survey

Respondents expect commercialization of cross-cutting and other technology by the mid-2010's

Industry Grouping
Beneficiaries
Combined
2007-12



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1 Note that respondents can think the FCH JU sped up commercialisation, and also believe that, overall, commercialisation is still slower than expected in 2007

SOURCE: FCH JU survey

Annual turnover forecast for 2020 by respondents shows growth in all sectors

EUR, mln

2013-20 New Energy World JU fuel cells & hydrogen for sustainability

2013 2020

CAGR <20%[1] CAGR 20-40%[1] CAGR >40%[1]

N = 33 (IG), N = 30 (Beneficiaries)

	Transport	Energy	Hydrogen production and storage	Cross-cutting	Other	Total
EU	198 864	68 694	44 736	2 1	1 41	313 2,337
U.S.	23 358	9 145	6 78	0 0	3 9	40 590
Japan	8 84	3 10	0 23	0 0	3 2	14 118
Korea	4 65	3 68	0 1	0 0	5 2	12 135
China	2 22	10 73	0 1	0 0	1 3	12 99
Other	11 88	25 110	8 19	0 0	1 4	45 220
Total	246 1,481	117 1,099	57 857	2 2	13 61	437 3,500

Question II.1.1. What are your annual turnover forecasts for YOUR different products or applications in FC&H (your expected annual turnover in 2013 & 2020)? N/A for research organisations

1 Not shown if turnover is below EUR 1 mln

SOURCE: FCH JU survey

Respondents forecast their turnover till 2020 to grow strongest in hydrogen production and storage in the EU

Percentage of the increase in annual turnover from 2013 to 2020

2013-20

>25% | 10%-15% | 0%-5%
15%-25% | 5%-10% | 0%

N = 33 (IG), N = 30 (Beneficiaries)

	Transport	Energy	Hydrogen production and storage	Cross-cutting	Other
EU	22%	20%	23%	0%	1%
U.S.	11%	4%	2%	0%	0%
Japan	2%	0%	1%	0%	0%
Korea	2%	2%	0%	0%	0%
China	1%	2%	0%	0%	0%
Other	3%	3%	0%	0%	0%

100% = EUR 3063 mln

Question II.1.1. What are your annual turnover forecasts for YOUR different products or applications in FC&H (your expected annual turnover in 2013 & 2020)? N/A for research organisations

SOURCE: FCH JU survey

Respondents forecast their expenditures[1] till 2020 to grow strongest in energy and H_2 production & storage in the EU

EUR, mln

2013-20 New Energy World JU fuel cells & hydrogen for sustainability

2013 2020

CAGR <10%[2] CAGR 10-20%[2] CAGR >20%[2]

N = 33 (IG), N = 30 (Beneficiaries)

	Transport		Energy		Hydrogen production and storage		Cross-cutting		Other		Total	
EU	295	364	108	272	36	227	4	6	24	35	467	905
U.S.	27	145	7	17	0	17	0	0	0	2	35	181
Japan	11	34	1	3	0	7	0	0	0	1	13	44
Korea	10	61	1	1	0	0	0	0	0	0	11	63
China	1	1	2	2	0	0	0	0	0	2	3	6
Other	8	5	7	15	0	1	0	0	0	0	15	21
Total	353	610	125	311	37	252	5	7	25	40	544	1,221

Question II.1.2. What is your forecast in terms of YOUR expenditure per year in FC&H (including R&D projects and market-introduction) for 2013-2020? For research organisations, please provide your expected annual budget.

1 Includes R&D and market introduction/deployment

2 Not shown if expenditures are below EUR 1 mln

SOURCE: FCH JU survey

Respondents expect their expenditures till 2020 to grow fastest in the EU, especially in H_2 production & storage and energy

Percentage of the increase in annual expenditures from 2013-20

2013-20

>25% | 10%-15% | 0%-5%
15%-25% | 5%-10% | 0%

N = 32 (IG), N = 82 (Beneficiaries)

	Transport	Energy	Hydrogen production and storage	Cross-cutting	Other
EU	10%	24%	28%	0%	2%
U.S.	17%	2%	2%	0%	0%
Japan	3%	0%	1%	0%	0%
Korea	7%	0%	0%	0%	0%
China	0%	0%	0%	0%	0%
Other	-1%	1%	0%	0%	0%

100% = EUR 676 mln

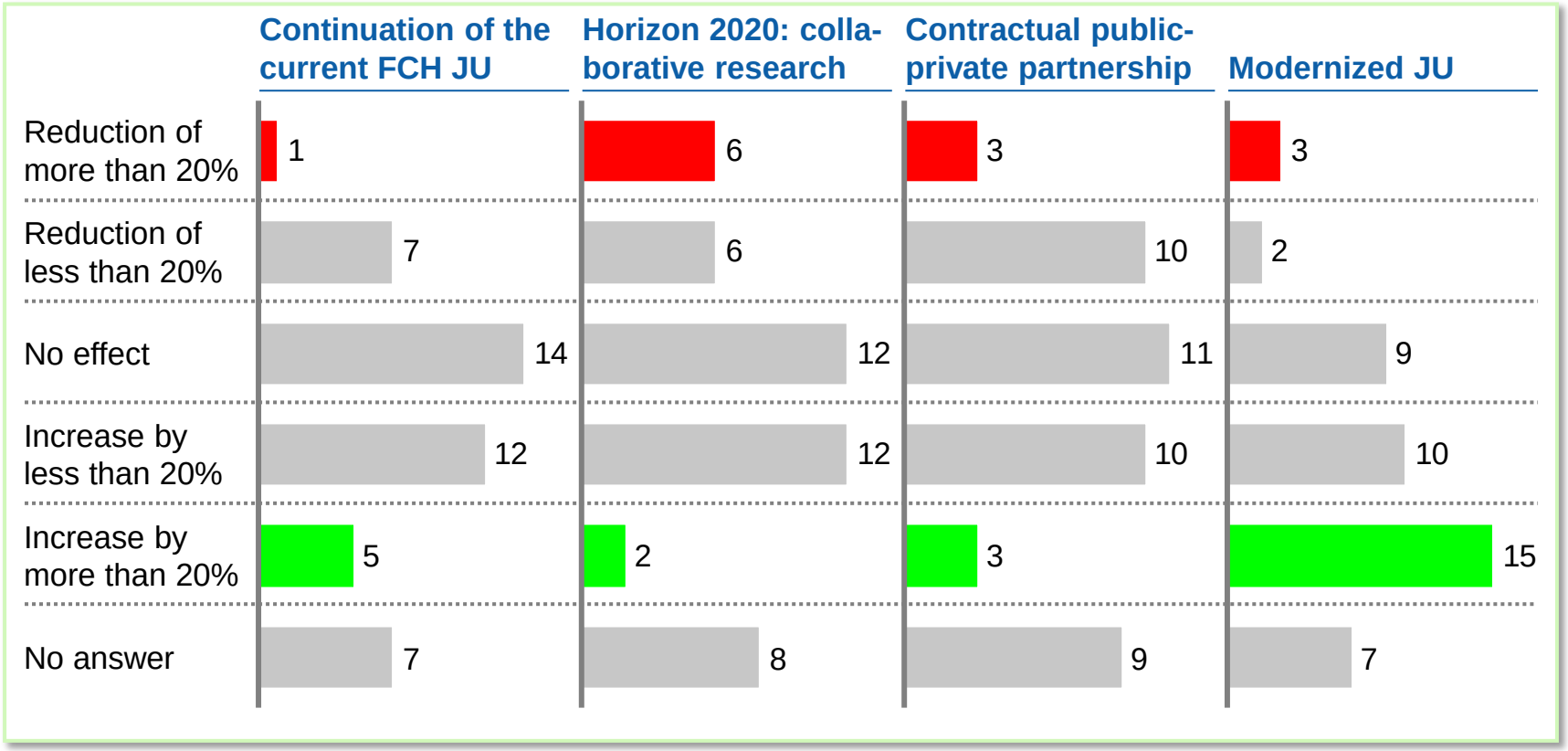
Question II.1.2. What is your forecast in terms of YOUR expenditure per year in FC&H (including R&D projects and market-introduction) for 2013-2020? For research organisations, please provide your expected annual budget.

SOURCE: FCH JU survey

IG members assess the impact of policy options for Horizon 2020 on R&D expenditures to be highest for a modernized JU

2013-20

N = 46 (IG)



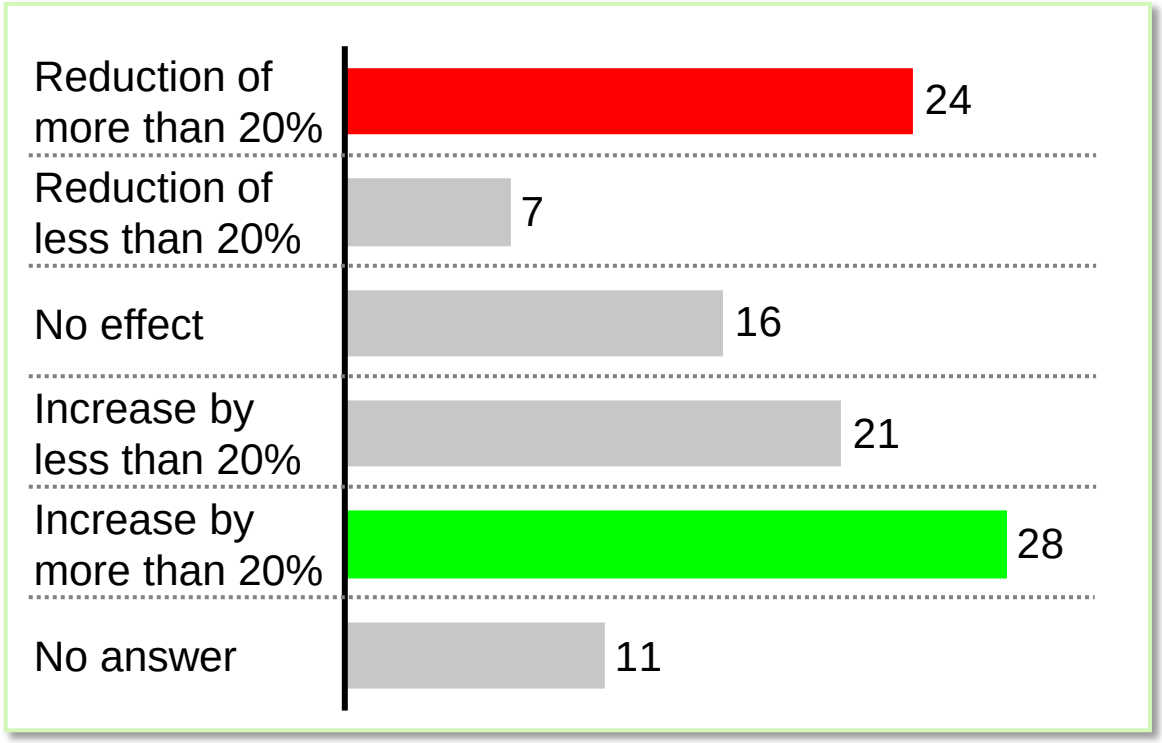
Question II.1.3. How would the four different options for the continuation of EU research funds for FC&H impact YOUR research expenditures (or budget for research organisations) in this field over the period 2013 - 2020?

SOURCE: FCH JU survey

Impact on R&D expenditures of beneficiaries of continuation of FCH JU varies

N = 107 (Beneficiaries)

2013-20



Question II.1.3. Compared to a possible termination of the FCH JU, how would a continuation of the FCH JU impact YOUR research expenditures on FC&H (or budget for research organisations) over the period 2013-2020?

SOURCE: FCH JU survey

Respondents assess impact of policy options on expenditures to be highest in a modernized JU for all technologies

2013-20

N = 46 (IG), N = 107 (B)[1]

Question II.1.4. Can you classify the impact of the four different options with regard to the different applications?

1 Respondents that did not answer are not shown

SOURCE: FCH JU survey

Respondents assess impact of policy options on expenditures in the EU to be highest with a modernized JU; for the rest of world the impact differences are less pronounced

N = 46 (IG), N = 107 (B)[1]

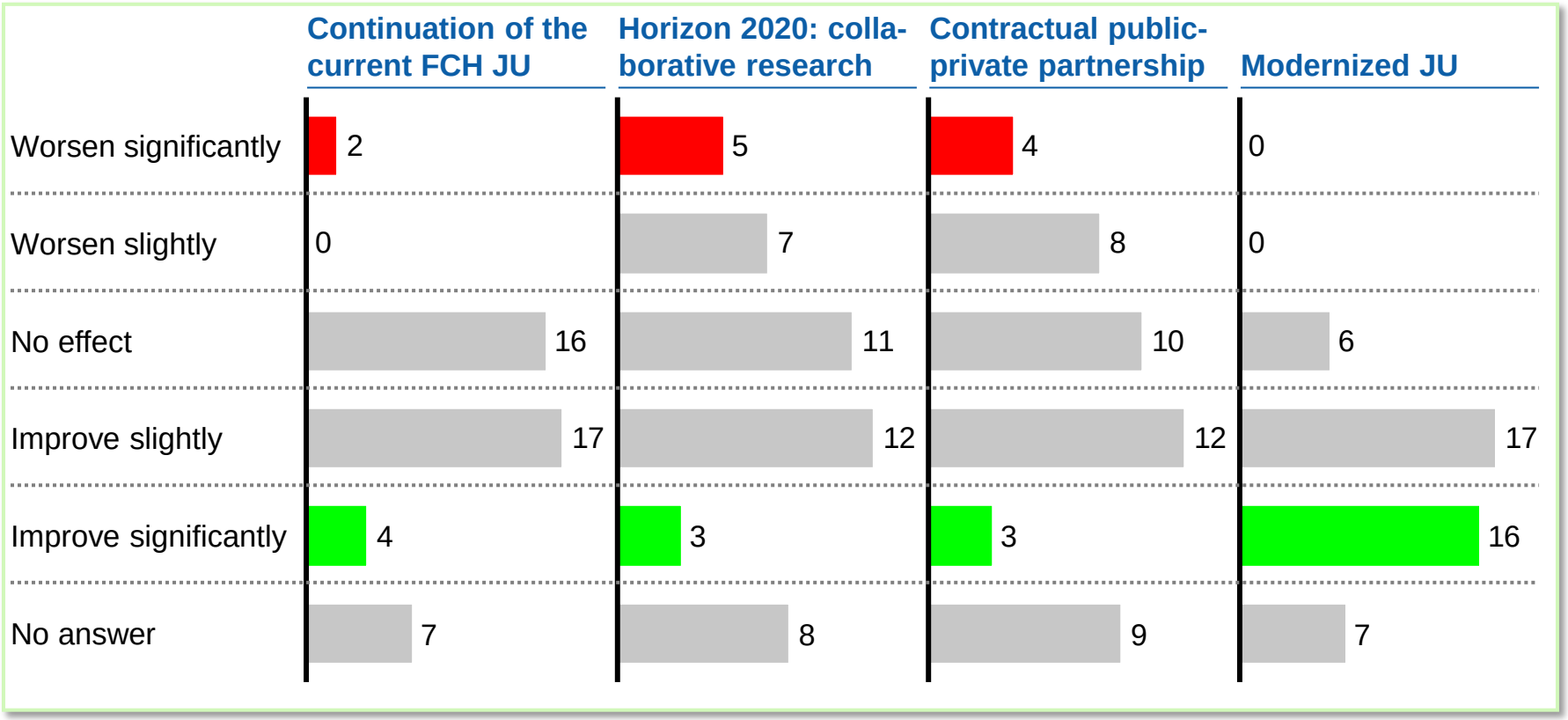
Question II.1.5. Can you classify the impact of the four different options by geographical area?

1 Respondents that did not answer are not shown

SOURCE: FCH JU survey

IG members assess impact of policy options for Horizon 2020 on research efficiency to be highest with a modernized JU

N = 46 (IG)

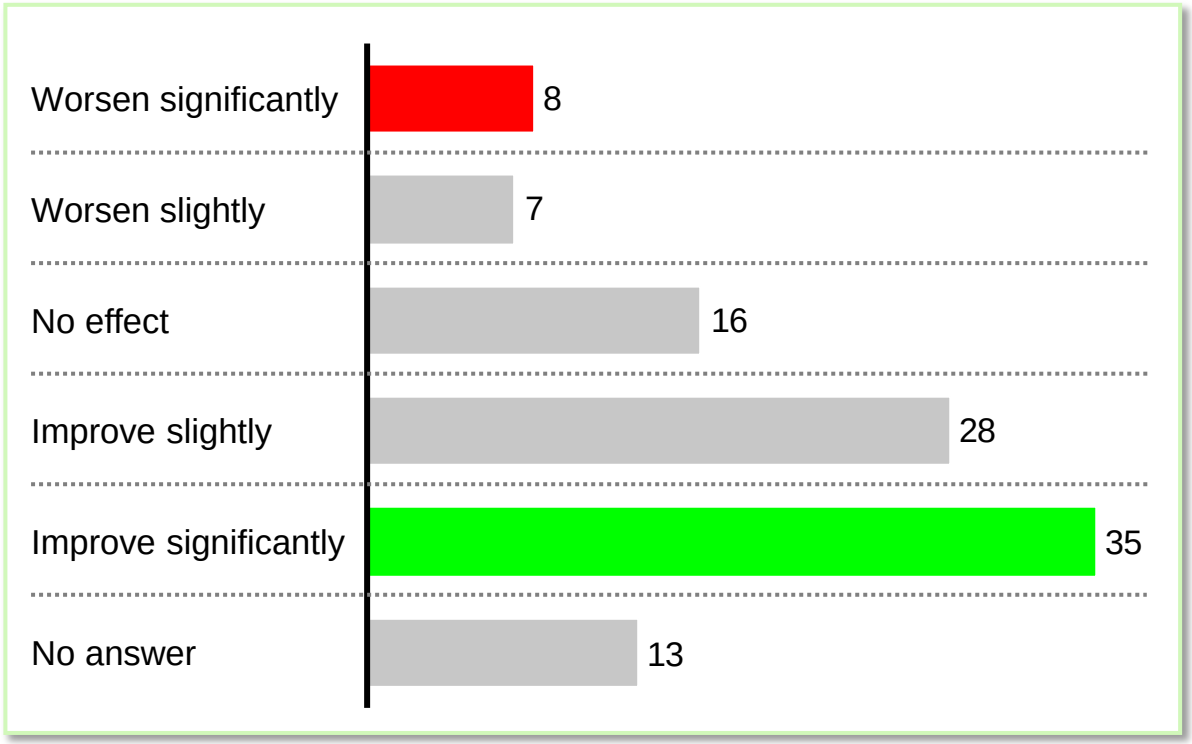


Question II.2.1. How would the following four options impact your research efficiency in the field of FC&H over the period of 2013 - 2020? Efficiency is understood to be the relationship between resources used and the results obtained (in other terms, to what extent does the cooperative research reduce (in your opinion) the amount of effort required to reach a given research objective (as a consequence of sharing of knowledge, spill-overs, synergies etc.)).

SOURCE: FCH JU survey

Continuation of the FCH JU improves research efficiency of beneficiaries

N = 107 (Beneficiaries)

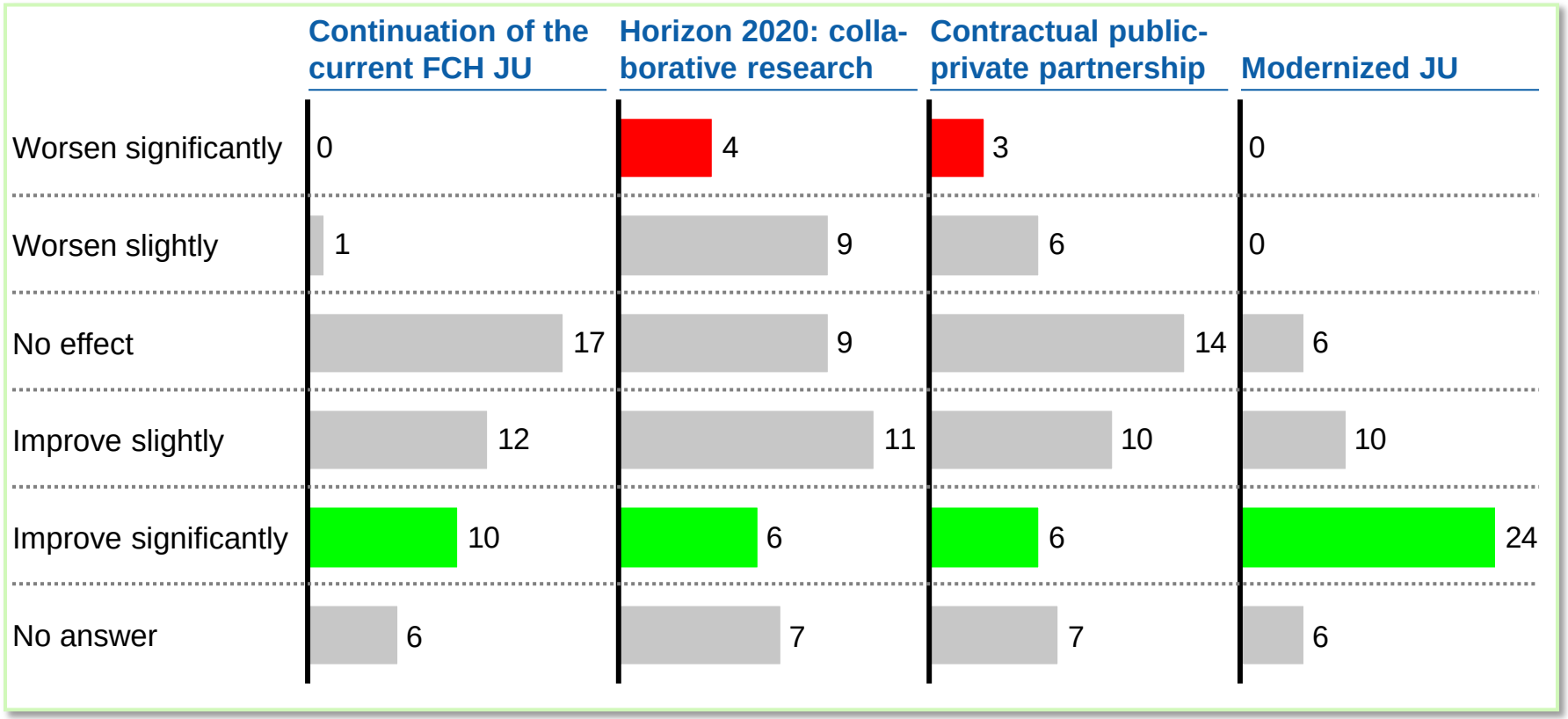


Question II.2.1. How would a continuation of the FCH JU impact your research efficiency in the field of FC&H over the period of 2013 - 2020? Efficiency is understood to be the relationship between resources used and the results obtained (in other terms, to what extent does the cooperative research reduce (in your opinion) the amount of effort required to reach a given research objective (as a consequence of sharing of knowledge, spill-overs, synergies etc.)

SOURCE: FCH JU survey

IG members assess impact of policy options for Horizon 2020 on product development to be highest with a modernized JU

N = 46 (IG)



Question II.2.2. How would the following four options impact product development in the field of FC&H over the period 2013 - 2020?

SOURCE: FCH JU survey

Continuation of the current FCH JU is seen as a significant improvement for product development in beneficiaries

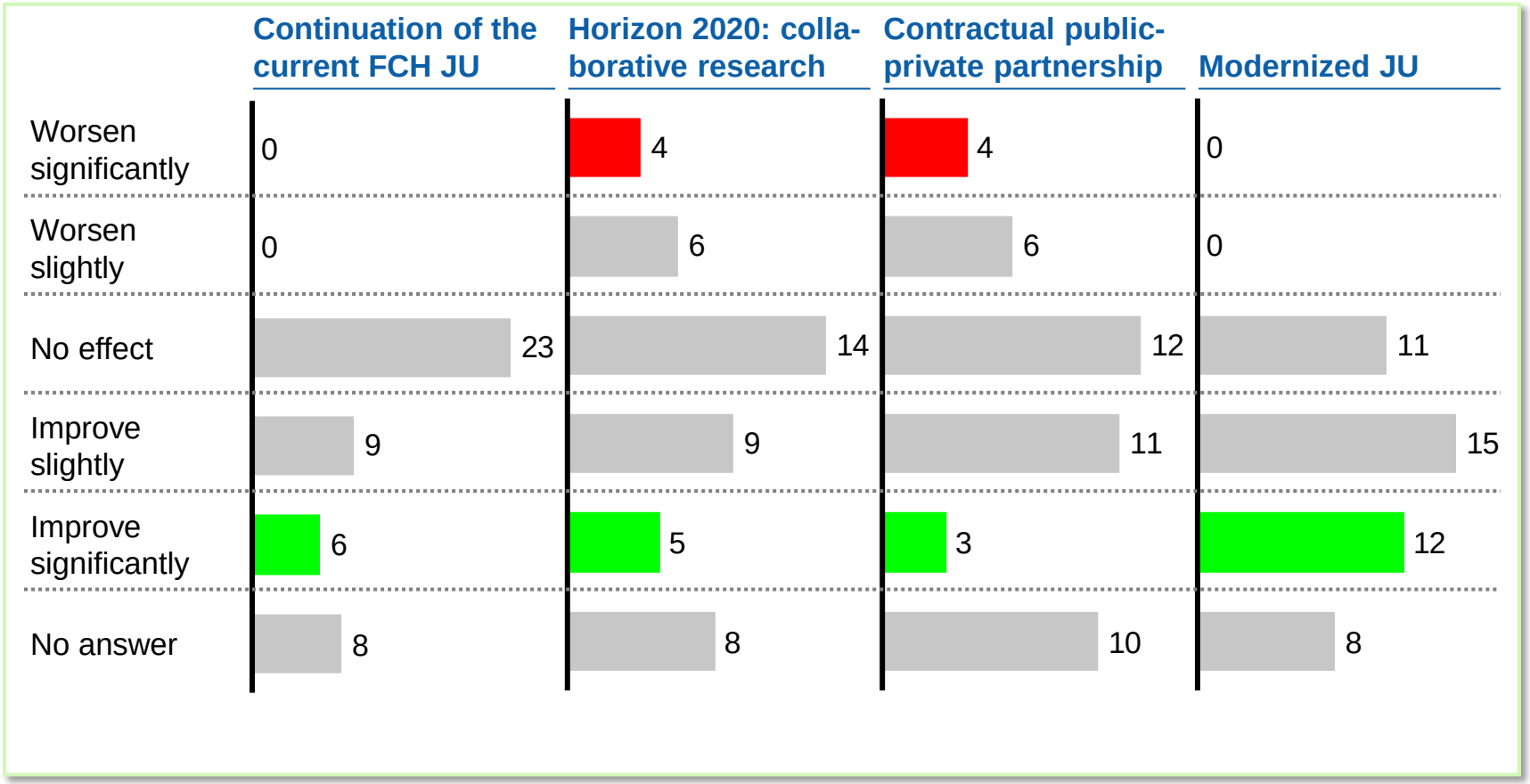
N = 107 (Beneficiaries)

Question II.2.2. How would a continuation of the FCH JU impact product development in the field of FC&H over the period 2013 - 2020?

SOURCE: FCH JU survey

IG members assess impact of policy options for Horizon 2020 on coordination of research to be highest with a modernized JU

N = 46 (IG)

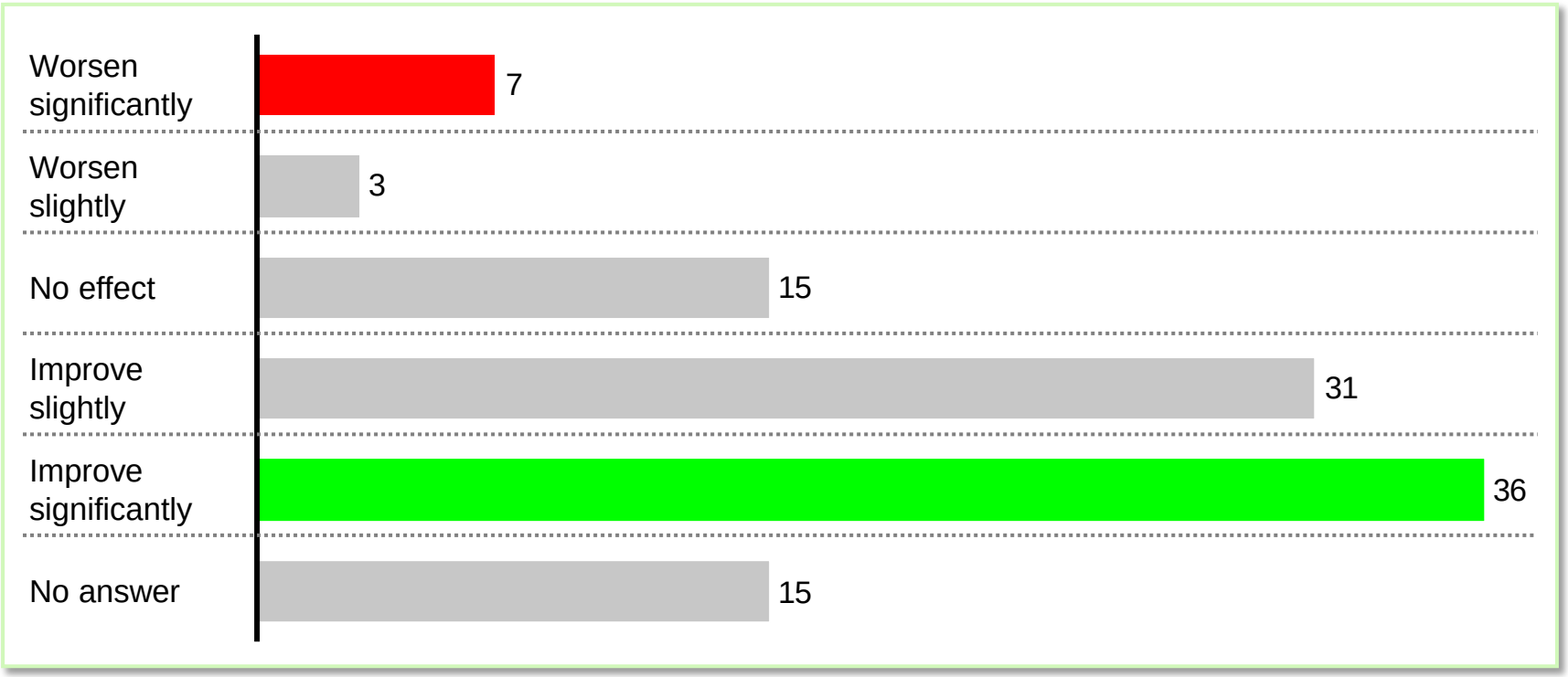


Question II.2.3. How would the four options impact the coordination of research between the FCH JU and MS programmes and thus on your participation in these programmes over the period 2013 - 2020?

SOURCE: FCH JU survey

Continuation of current FCH JU improves coordination of research for beneficiaries

N = 107 (Beneficiaries)



Question II.2.3. How would the four options impact the coordination of research between the FCH JU and MS programmes and thus on your participation in these programmes over the period 2013 - 2020?

SOURCE: FCH JU survey

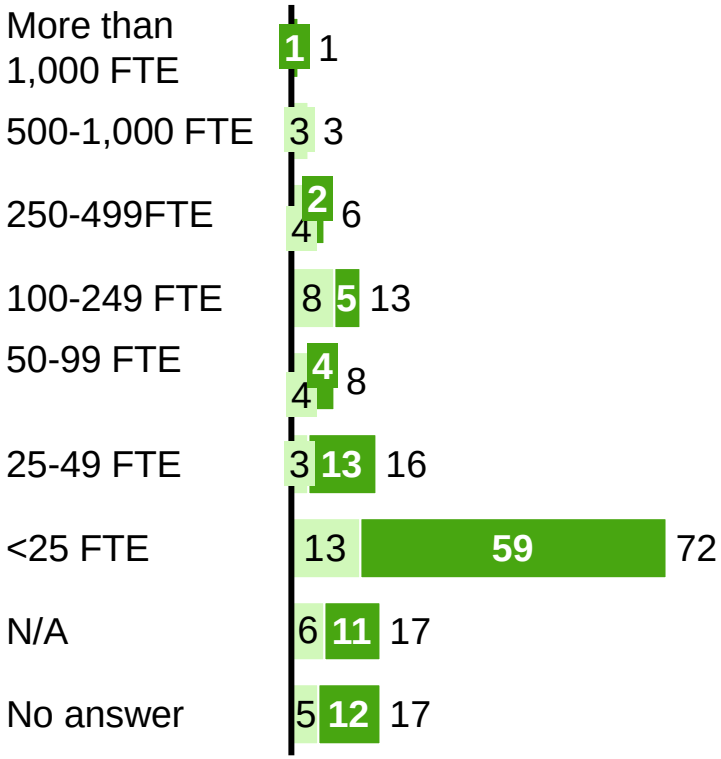
Respondents expect FC&H organizations to considerable rise in size over the next years, even in the absence of prolongation of the FCH JU

N = 46 (IG), 107 (Beneficiaries)

Industry Grouping Beneficiaries

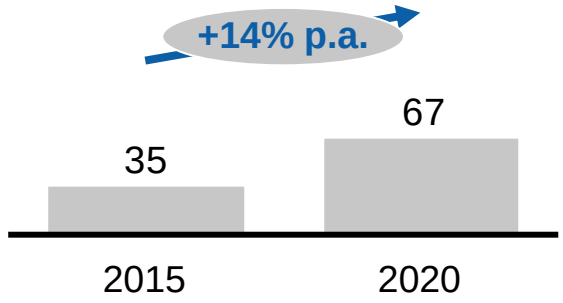
Expected size of organizations in 2020 without prolongation of the FCH JU

Number of responses



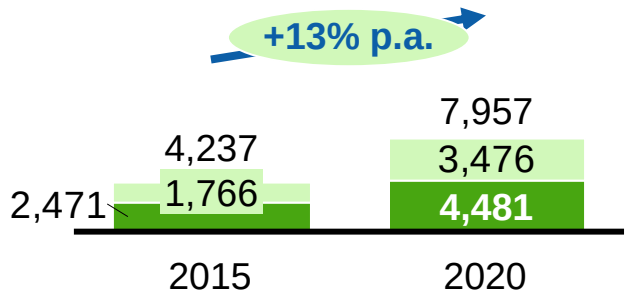
Average number of people per organization without prolongation of the FCH JU

Number of FTE



Total number of people in all organizations without prolongation of the FCH JU

Number of FTE



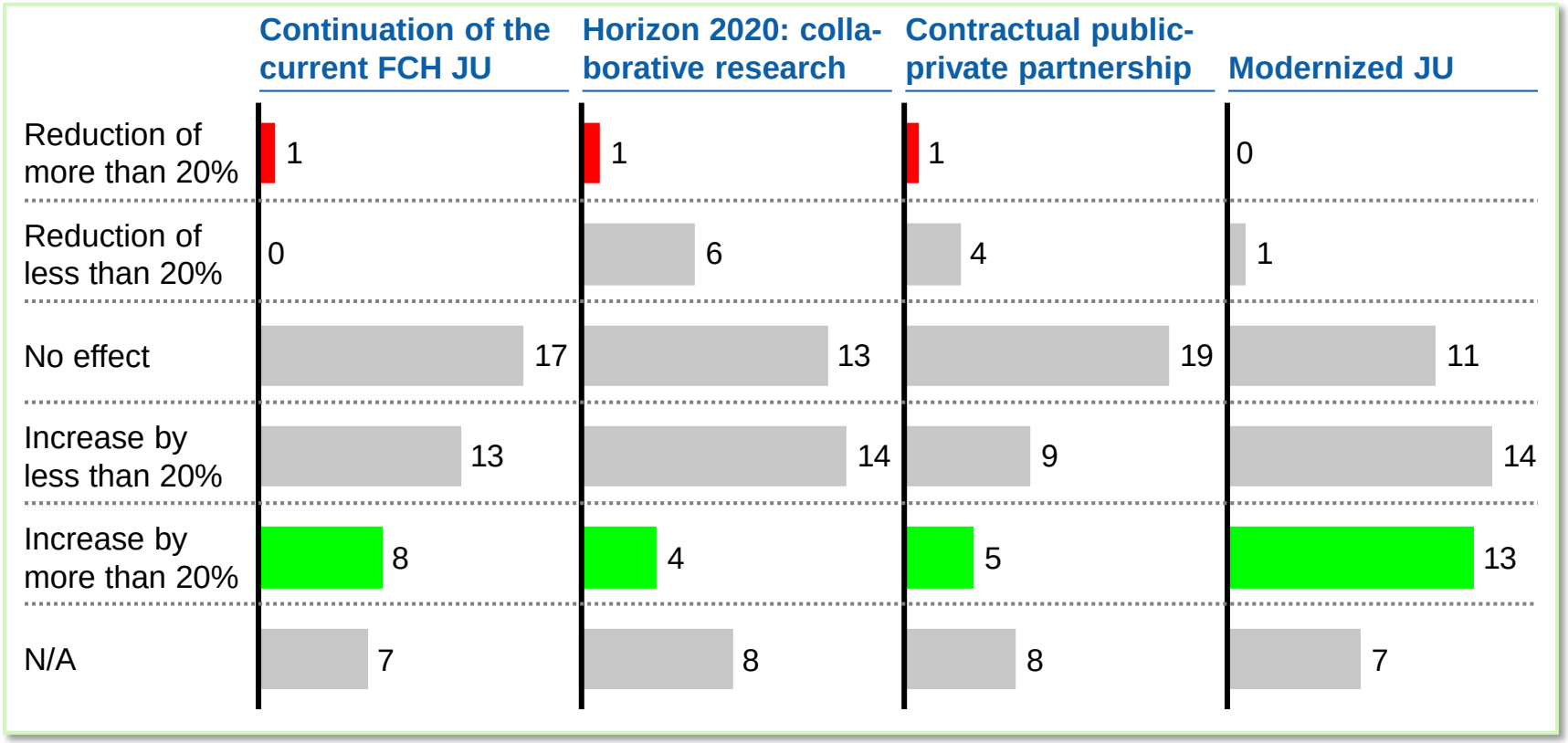
Question II.3.1. In your best estimation and considering NO prolongation of the FCH JU, how many people is your organisation likely to employ in the FC&H sector by 2015 and 2020 (number of people full time equivalent)

Note: For these questions, the participants were asked to assume NO prolongation of the FCH JU

SOURCE: FCH JU survey

Most IG members expect that a modernized JU will have most effect on staff increase

N = 46 (IG)

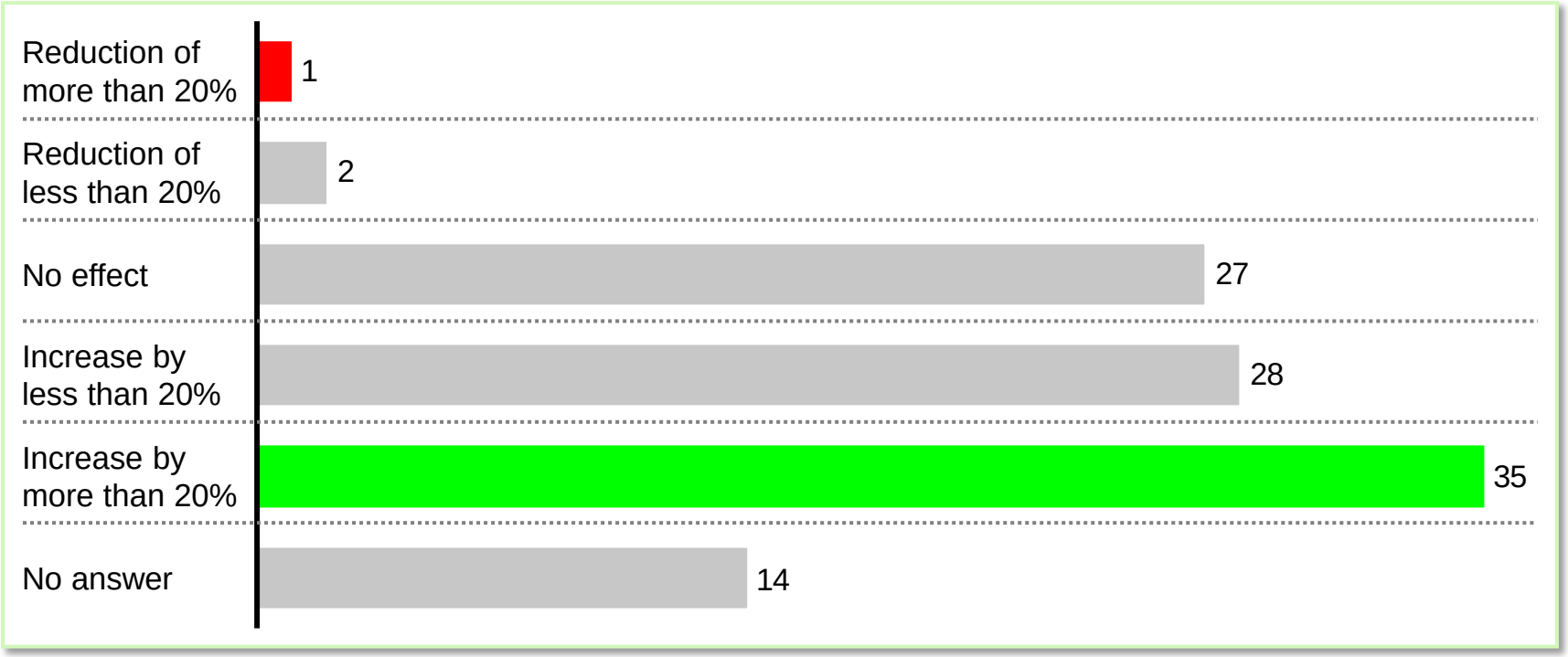


Question II.3.2. What would be the impact of the four options on your FC&H staff compared to number of FTEs in 2020 in question 3.1 above? E.g. No effect means same number of FTEs in 2020 as provided in question 3.1 above.

SOURCE: FCH JU survey

Continuation of current FCH JU mostly has a positive effect on the amount of FC&H staff for beneficiaries

N = 107 (Beneficiaries)



Question II.3.2. What would be the impact of continuation of the FCH JU on your FC&H staff compared to number of FTEs in 2020 in question 3.1 above? E.g. No effect means same number of FTEs in 2020 as provided in question 3.1 above

SOURCE: FCH JU survey

The vast majority of respondents is in favor of continuation of FCH JU; expected public share of expenditures is less than 50% for most

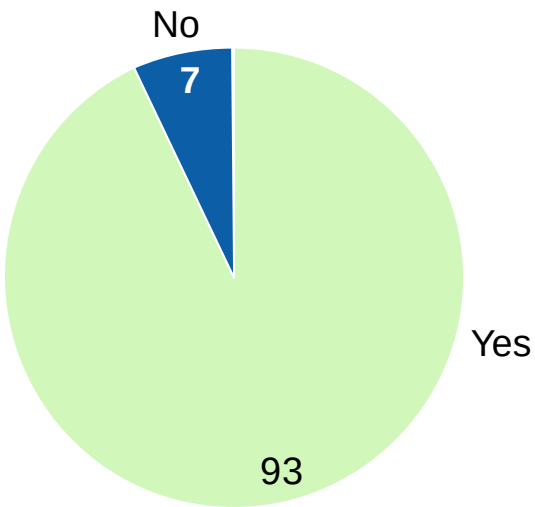
New Energy World JU
fuel cells & hydrogen for sustainability
2013-20

Industry Grouping Beneficiaries

Are you in favor of continuation of the FCH JU?

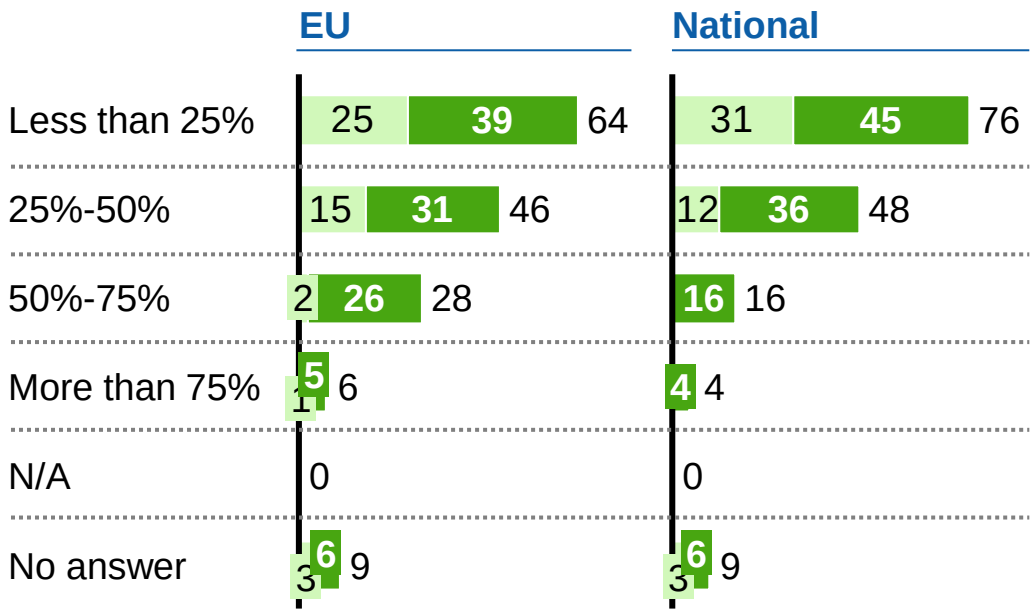
Percentage[2]

N = 44 (IG), 100 (Beneficiaries)



Expected share of expenditures[1] financed by

Number of responses



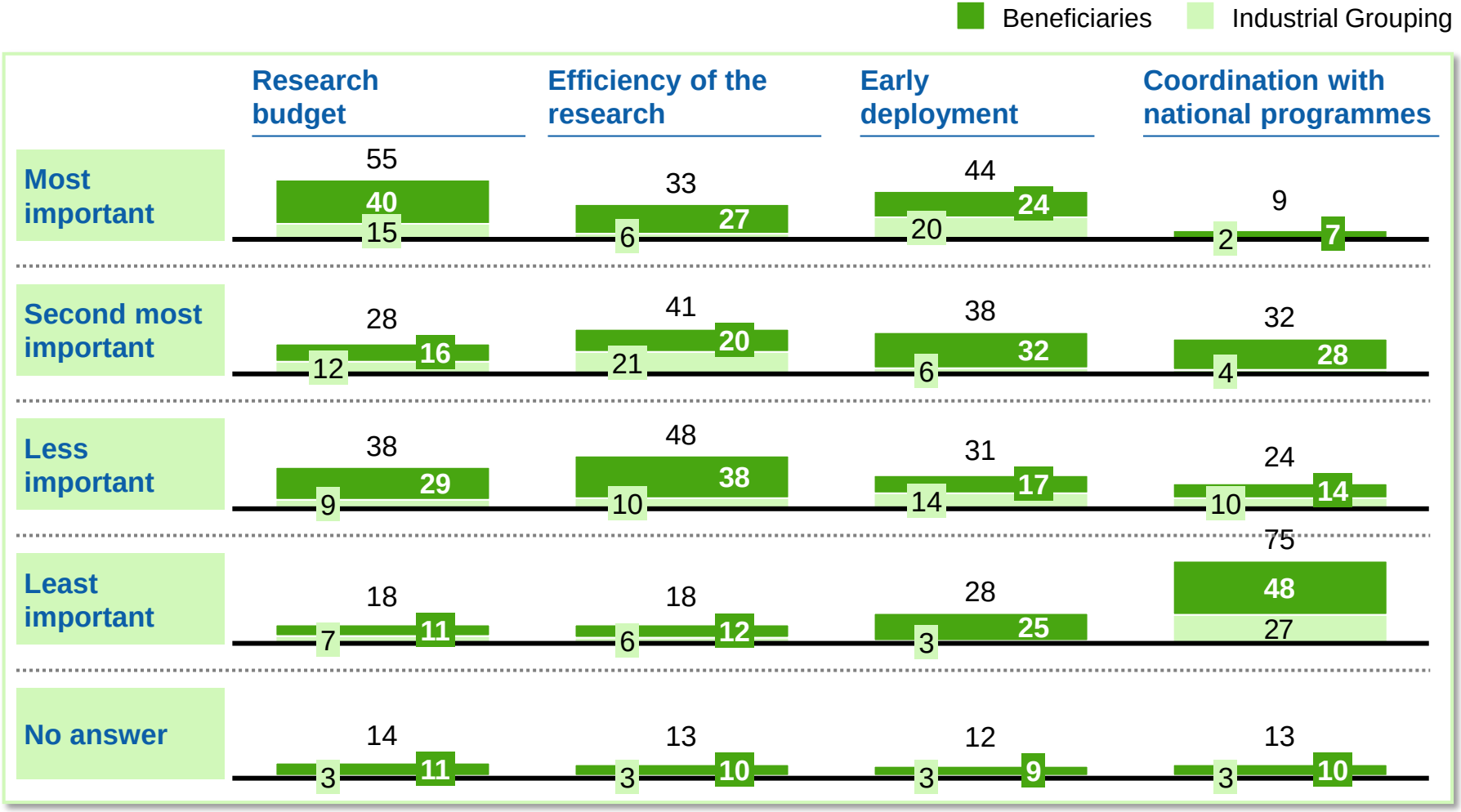
Question II.4.1. What share of your TOTAL FC&H expenditures (or budget for research organisations) do you expect to be financed by EU programmes (FCH JU or European Commission) in 2013-2020?
Question II.4.2. What share of your TOTAL FC&H expenditures (or budget for research organisations) do you expect to be financed by national programmes in 2013-2020?
Question II.4.3. Considering all the answers above, would you be in favour of a continuation of the FCH JU or not?

1 Includes R&D and market introduction/deployment
2 Includes both Beneficiaries and Industrial Grouping

SOURCE: FCH JU survey

Continuation of FCH JU deemed especially important for early deployment and research budget

Number of responses, N = 46 (IG), 107 (Beneficiaries)

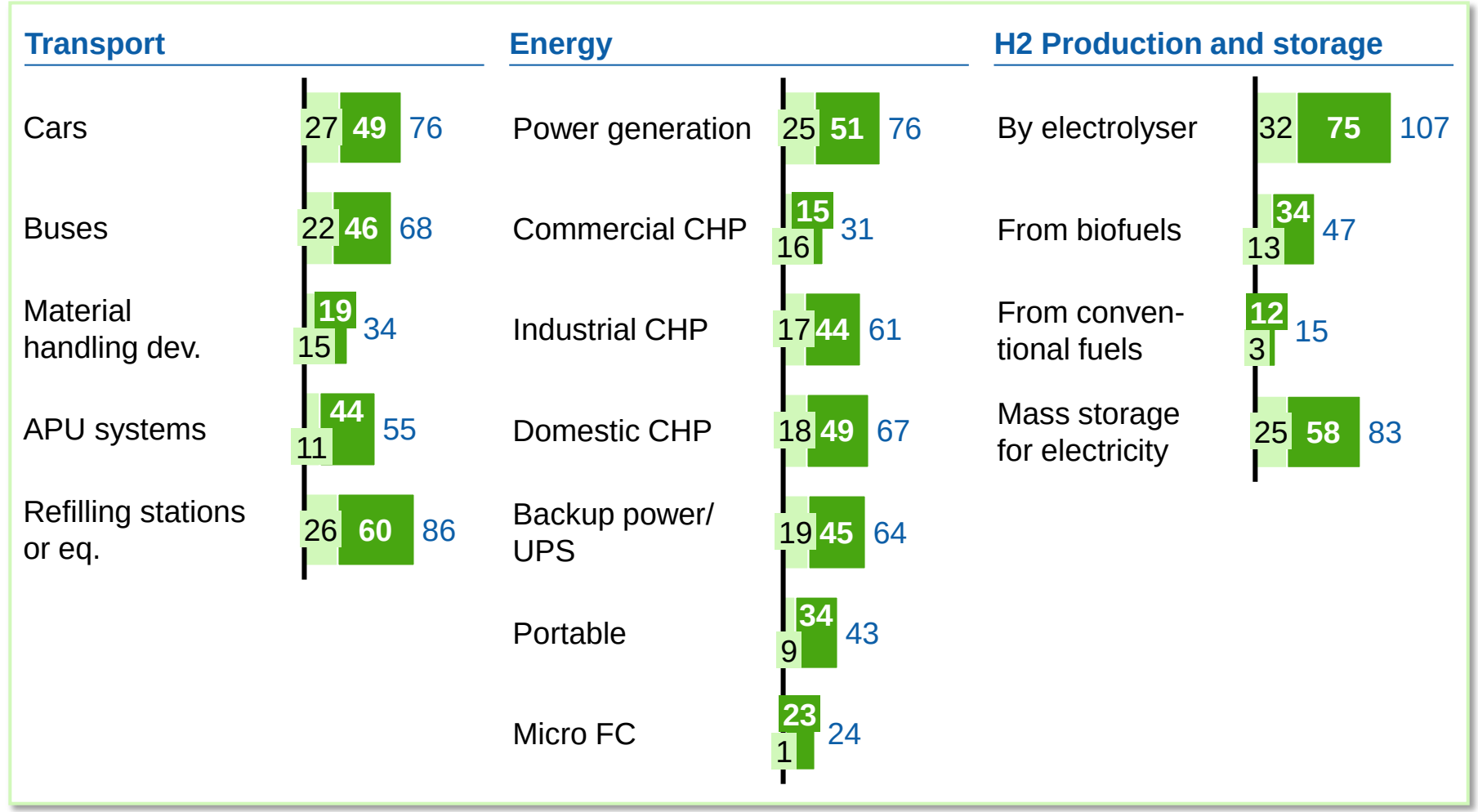


Question II.4.4. How would you rank the impacts discussed here as important discriminators between the continuation or termination of the FCH JU? In other terms, what feature is the most important for this choice? Rank most important to least important

SOURCE: FCH JU survey

Suggested focus areas of respondents are electrolysers, mass storage, and refueling stations (1/2)

N = 46 (IG), 107(Beneficiaries)



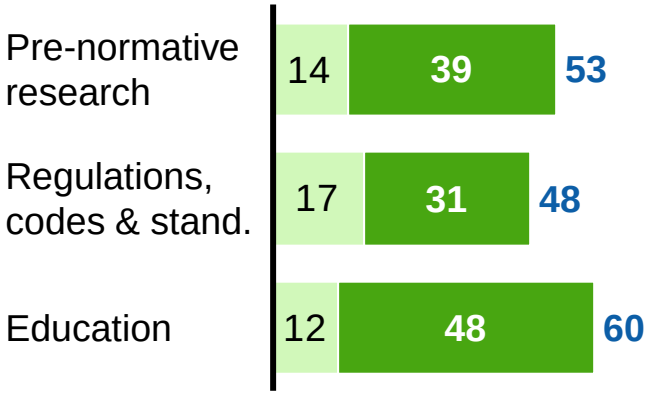
Question II.4.5. On what applications should the action at European level focus? (you can select several answers

SOURCE: FCH JU survey

Suggested focus areas of respondents are electrolysers, mass storage, and refueling stations (2/2)

N = 46 (IG), 107(Beneficiaries)

Cross-cutting



Other

IG members:

- Renewable hydrogen production through other methods than electrolysis
- Development of a European supply chain
- Early markets

Beneficiaries:

- Advanced fuel cell materials
- Safety
- Policy
- Hydrogen storage
- Standardisation world-wide
- CCS
- International Cooperation

Question II.4.5. On what applications should the action at European level focus? (you can select several answers)

SOURCE: FCH JU survey