

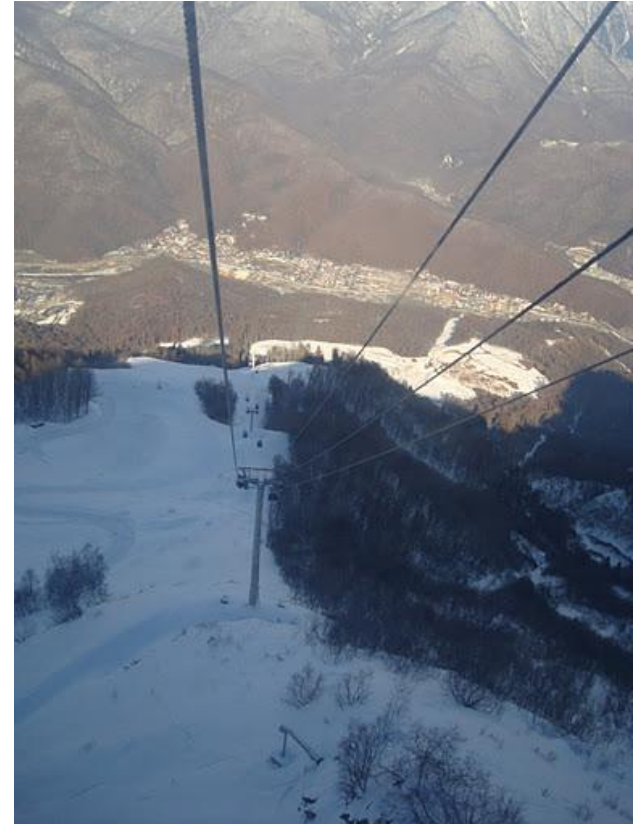
# Sochi 2014

## *Screening Assessment Carbon Footprint and Compensation Options*

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# What is a screening assessment carbon footprint (SACF)?

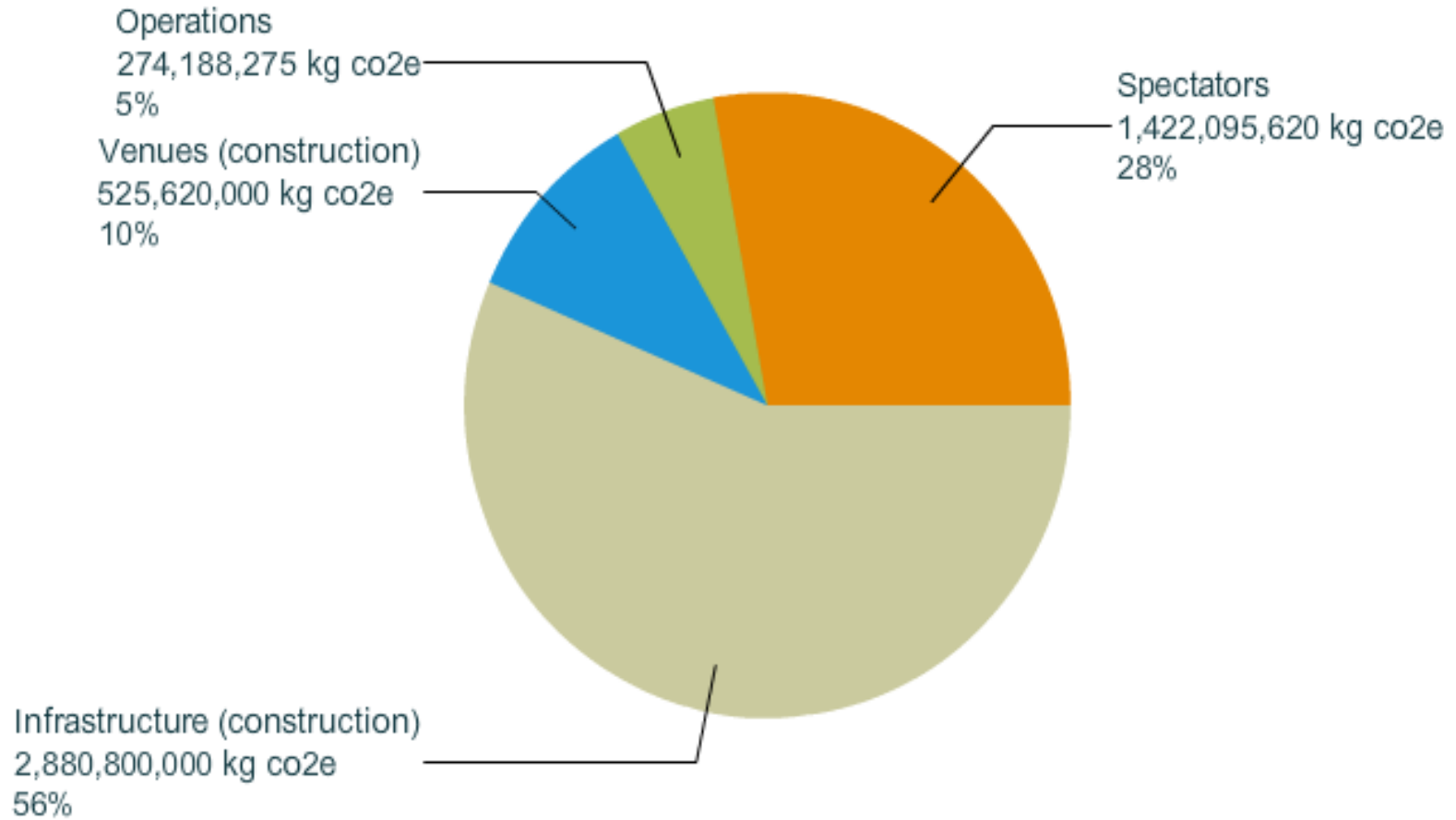
- A rough estimate of the predicted carbon footprint based on the best available data
- Helps to establish boundaries, emission sources and emission factors
- Assists in the early identification of emission 'hotspots' (significant emission sources)

*Sochi's carbon footprint calculated using the Footprinter software*



# Sochi 2014's SACF

**TOTAL CARBON FOOTPRINT: 5.1 million tonnes CO<sub>2</sub>e**



# Why is Sochi's footprint so big?

Sochi's footprint is larger than London and Vancouver

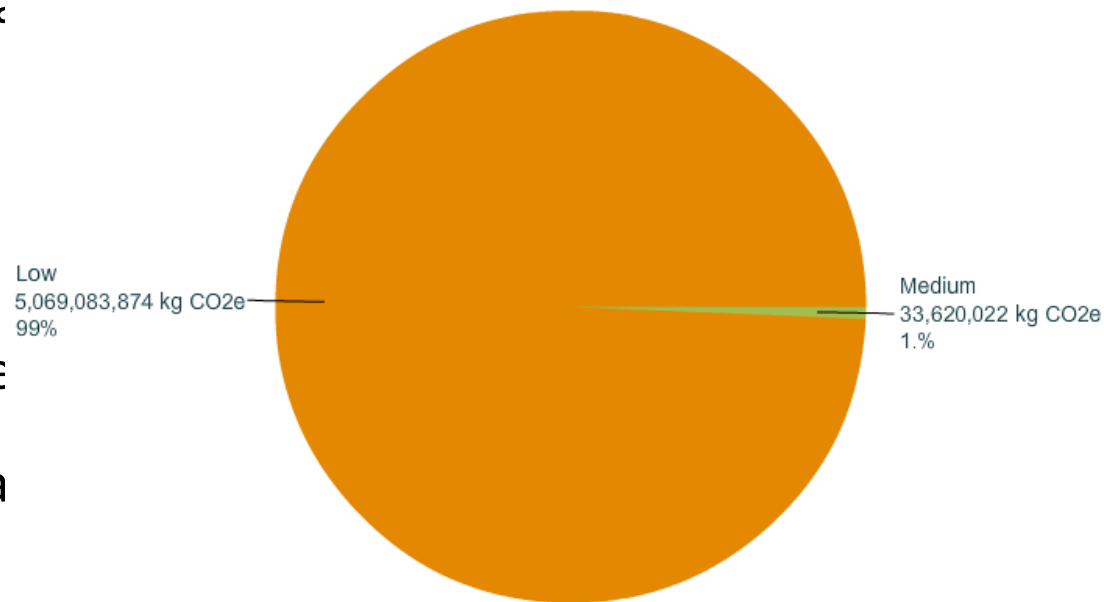
- More spectators are expected to fly to Sochi than in London or Vancouver – and stay longer.
- There is more infrastructure construction than London or Vancouver.

However:

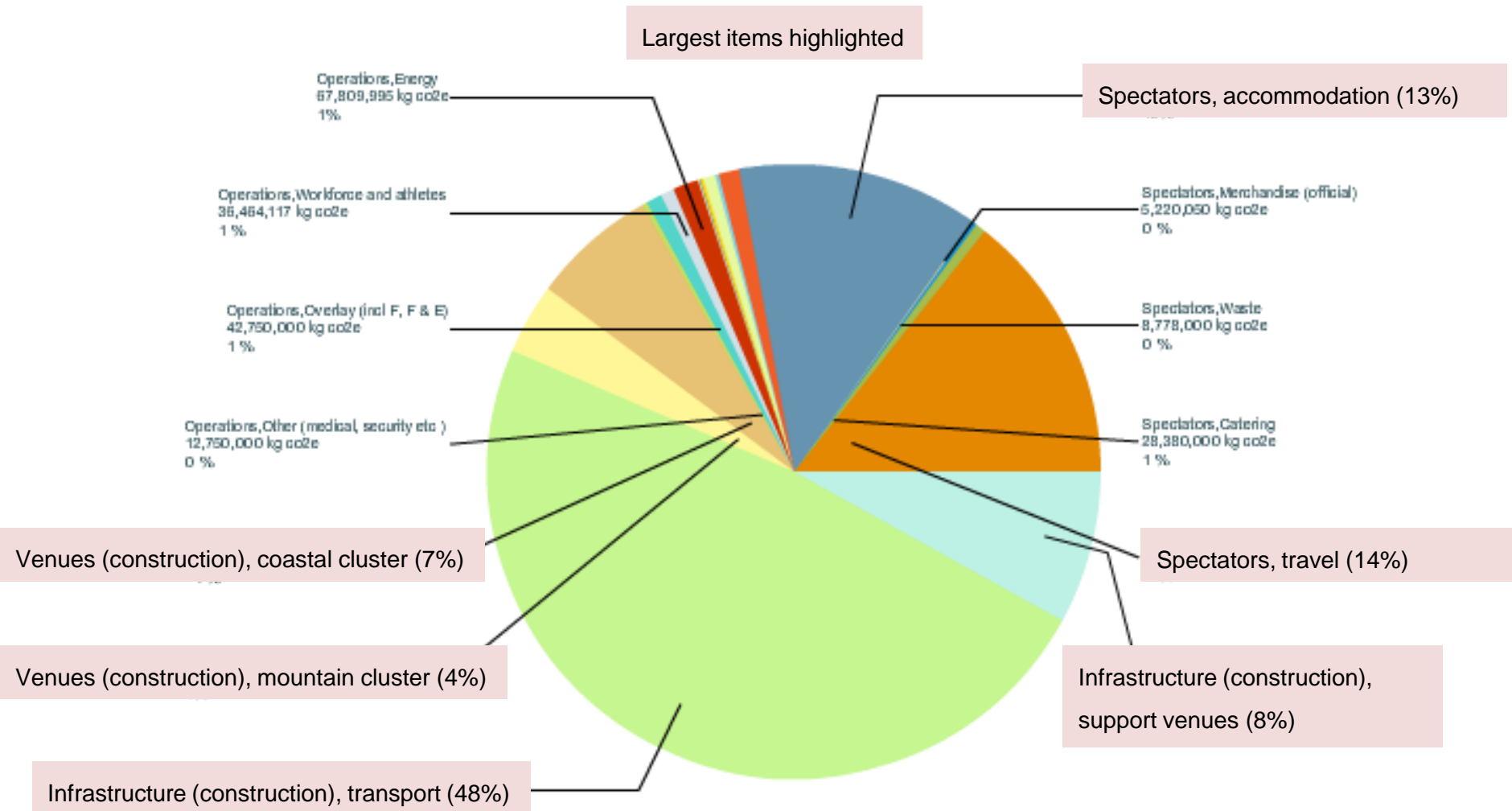
- The footprint for venues and operations are the same order of magnitude as Vancouver and London

# Sochi 2014 data quality

- All emission sources rated 'High', 'Medium' or 'Low' based on quality of the data available
- At this stage, 99% of the footprint based on 'Low' quality data
- Many assumptions and estimates used. These were based on Vancouver and London's footprint as well as data from other international projects.
- **Note: IGCE still reviewing the footprint**



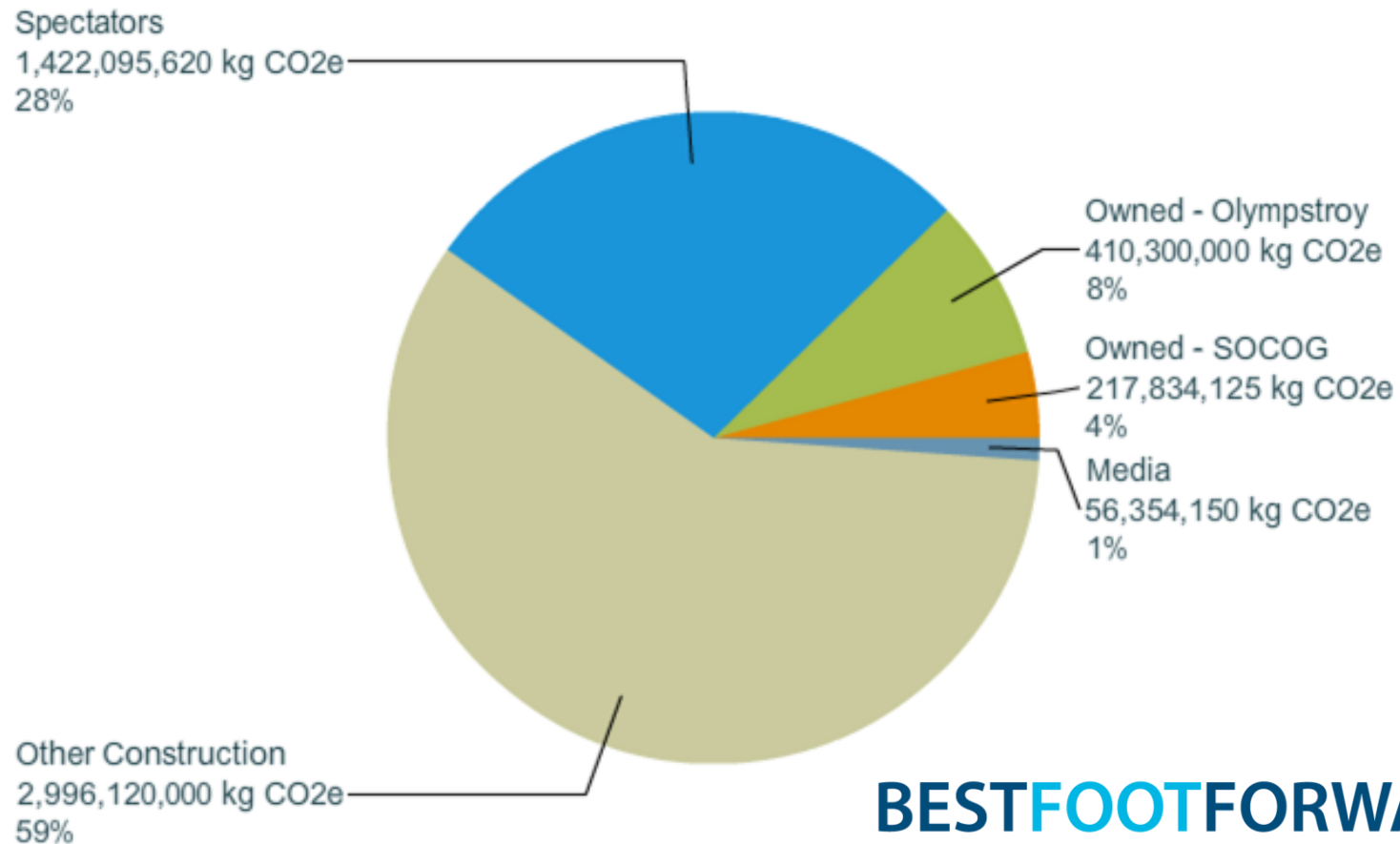
# Detailed breakdown of footprint



# Who is responsible for the footprint?

The Sochi organising committee and Olympstroy are directly responsible for only 12% of the footprint.

The remainder is the responsibility of either spectators, media or the public/private delivery partners responsible for constructing the infrastructure and venues.



# Breakdown of ownership

		Owned - SOCOG	Owned - Olympstroy	Spectators	Other Construction	Media	Grand Total
Infrastructure (construction)	Support venues				410,200,000		410,200,000
	Transport infrastructure		111,000,000		2,359,600,000		2,470,600,000
Operations	Energy	67,809,995					67,809,995
	Ground transport	32,649,126					32,649,126
	Media					56,354,150	56,354,150
	Other (medical, security etc.)	12,750,000					12,750,000
	Other ceremonies and culture	1,125,000					1,125,000
	Overlay (incl F, F & E)	42,750,000					42,750,000
	Staff travel and office	8,615,367					8,615,367
	Technology	9,750,000					9,750,000
	Torch relay and cauldron	970,896					970,896
	Travel grants	4,949,625					4,949,625
	Workforce and athletes	36,464,117					36,464,117
Spectators	Accommodation			649,000,000			649,000,000
	Catering			28,380,000			28,380,000
	Merchandise (official)			5,220,050			5,220,050
	Travel			730,717,570			730,717,570
	Waste			8,778,000			8,778,000
Venues (construction)	Coastal Cluster		262,400,000		73,800,000		336,200,000
	Mountain Cluster		36,900,000		152,520,000		189,420,000
Grand Total		217,834,125	410,300,000	1,422,095,620	2,996,120,000	56,354,150	5,102,703,895

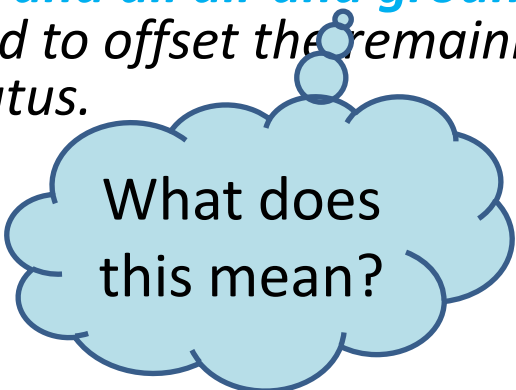


# Compensation options

**Bid book commitment is unclear as to what components of the footprint are to be made 'carbon neutral'.**

*Sochi 2014 will reach its carbon neutral goal by adopting energy conservation measures in all new construction, by retrofitting existing energy production facilities to operate using renewable fuels, and by offsetting remaining greenhouse gas emissions with emission reduction credits. The Sochi 2014 carbon footprint will be calculated based on power use from the time the Games are won through the post-Games shut-down phase. Quantification will be based on current July 2007 usage levels and projections for new facilities built for Games time.*

***Quantification will encompass all utilised power, including use of electricity, and all air and ground transport.*** Emission reduction credits will be used to offset the remaining carbon footprint to reach a carbon-neutral status.



What does  
this mean?

# Possible definitions: power

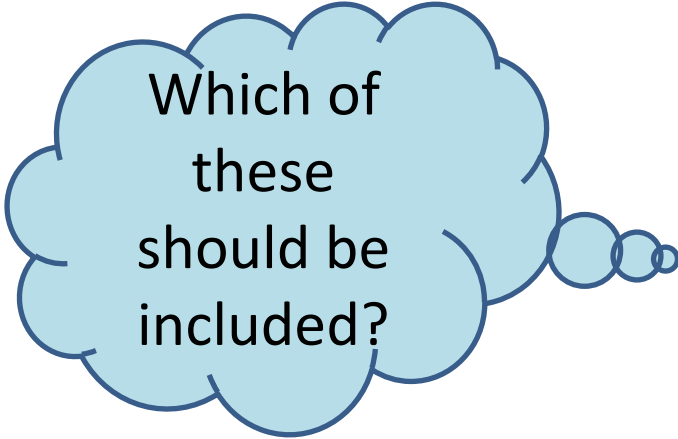
*“Quantification will encompass **all utilised power**, including use of electricity, and all air and ground transport”*

**Utilised power** = 68,000 tCO<sub>2</sub>e (venue energy use) + 3,000 tCO<sub>2</sub>e (office energy use) = 71,000 tCO<sub>2</sub>e

Included in all Options

# Possible definitions: air transport

*“Quantification will encompass all utilised power, including use of electricity, and all **air** and ground transport”*



Which of these should be included?

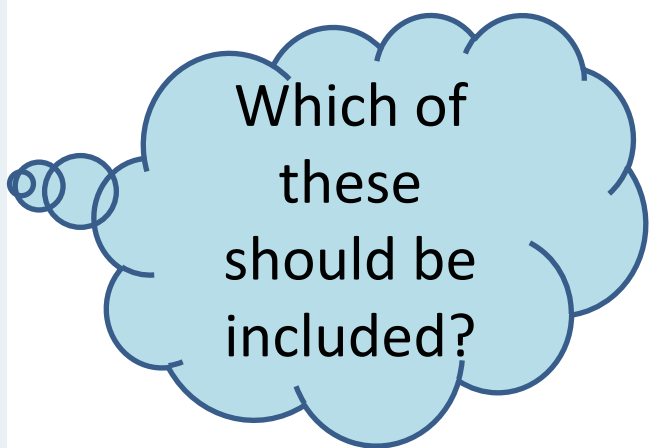
All air travel	tCO2e	% of air travel
Media	11,219	1.5%
Staff travel	2,970	0.4%
<b>Spectator travel</b>	<b>725,945</b>	<b>97.4%</b>
Travel grants (athletes)	4,950	0.7%
Torch relay	517	0.1%
<b>TOTAL</b>	<b>745,600</b>	

*Note: assumes that volunteer workforce travel to Sochi by train or car*

# Possible definitions: ground transport

*“Quantification will encompass all utilised power, including use of electricity, and all air and **ground transport**”*

Ground transport	tCO2e	% of ground travel
<b>Bus and car vehicle fleet</b>	<b>32,649</b>	<b>78%</b>
Staff travel	2,614	6%
Torch relay and cauldron	454	1%
Spectator road and rail	4,773	11%
Workforce and athletes	1,608	4%
<b>TOTAL</b>	<b>42,098</b>	

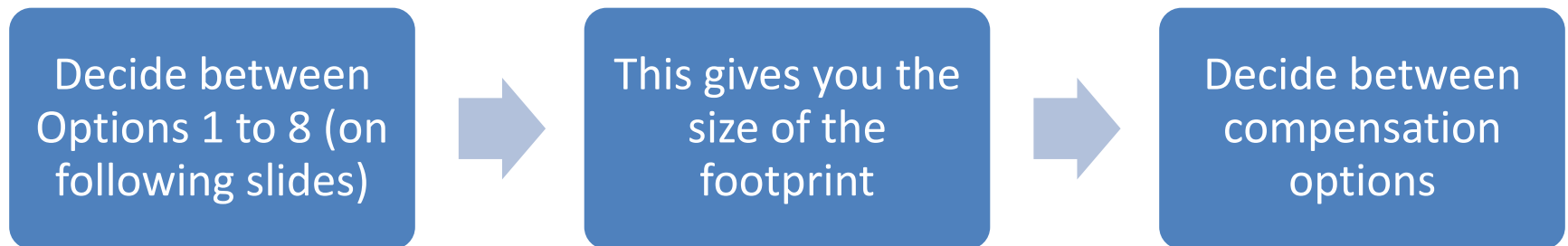


Which of these should be included?

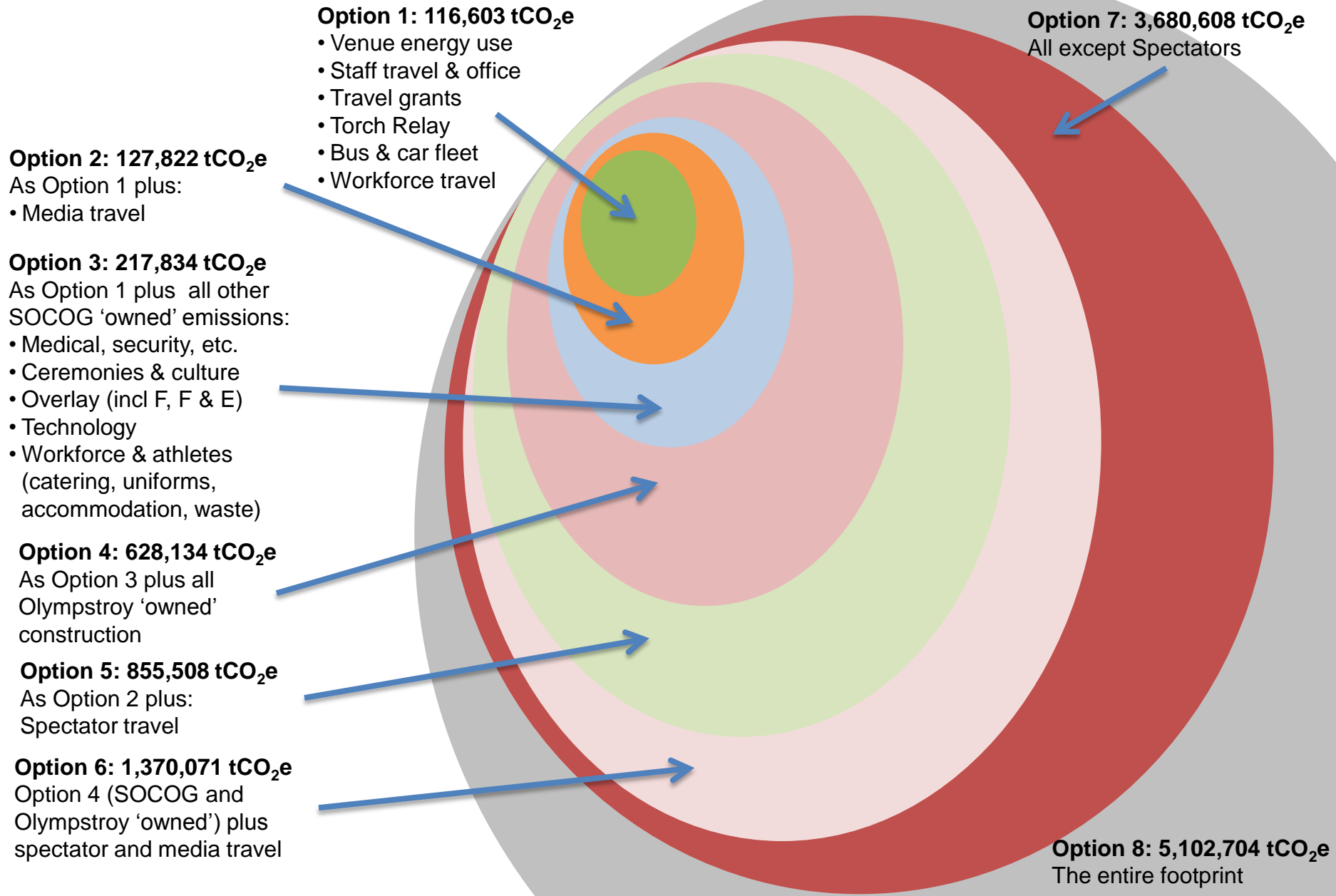
# Other options

- Neutralise all SOCOG 'owned' emissions?  
(218,000 tCO<sub>2</sub>e)
- Neutralise all Olympstroy 'owned' emissions?  
(410,000 tCO<sub>2</sub>e)
  - Neutralise all footprint except spectators  
(3,680,608 tCO<sub>2</sub>e)
- Neutralise entire footprint (5,102,704 tCO<sub>2</sub>e)

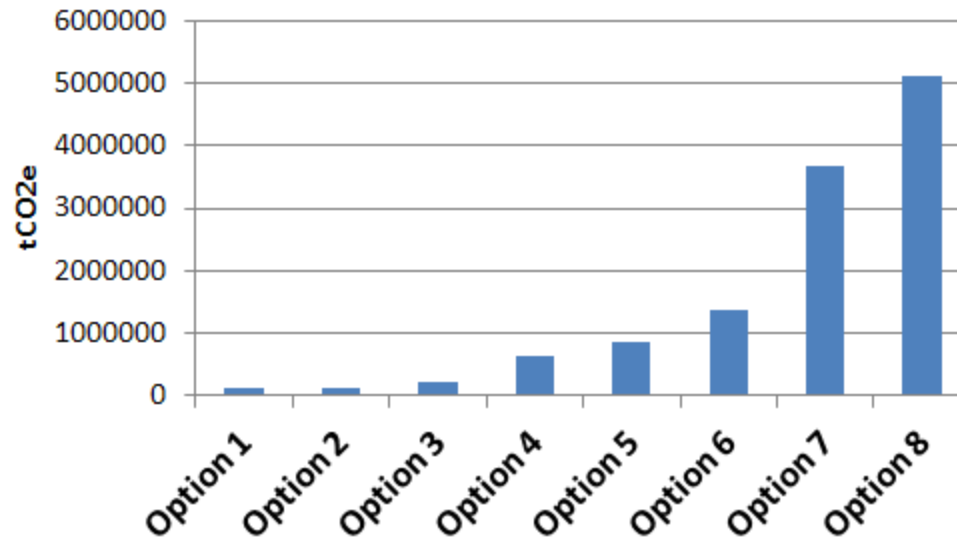
# Decision process



# Eight options: boundaries of responsibility



# Summary: Options 1 to 8 costs



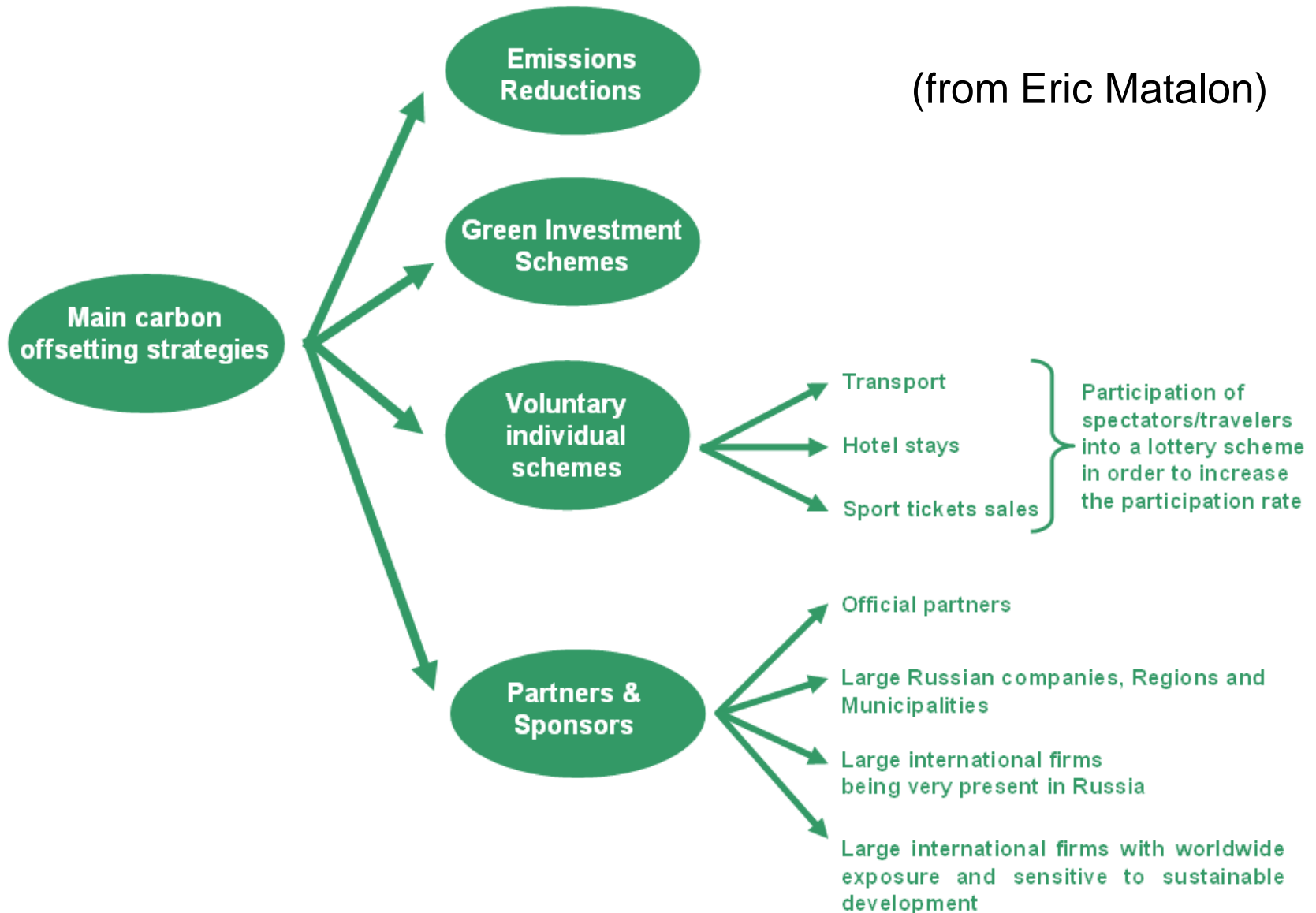
Offset Price (in Euros)	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8
EU ETS current	796,397	873,024	1,487,807	4,290,156	5,843,118	9,357,584	25,138,553	34,851,468
Low quality credits	418,604	458,881	782,025	2,255,002	3,071,273	4,918,554	13,213,383	18,318,707
High quality credits	1,049,425	1,150,397	1,960,507	5,653,207	7,699,569	12,330,638	33,125,472	45,924,336

Price vary widely: Above is based on market prices (in Euros) early April 2012

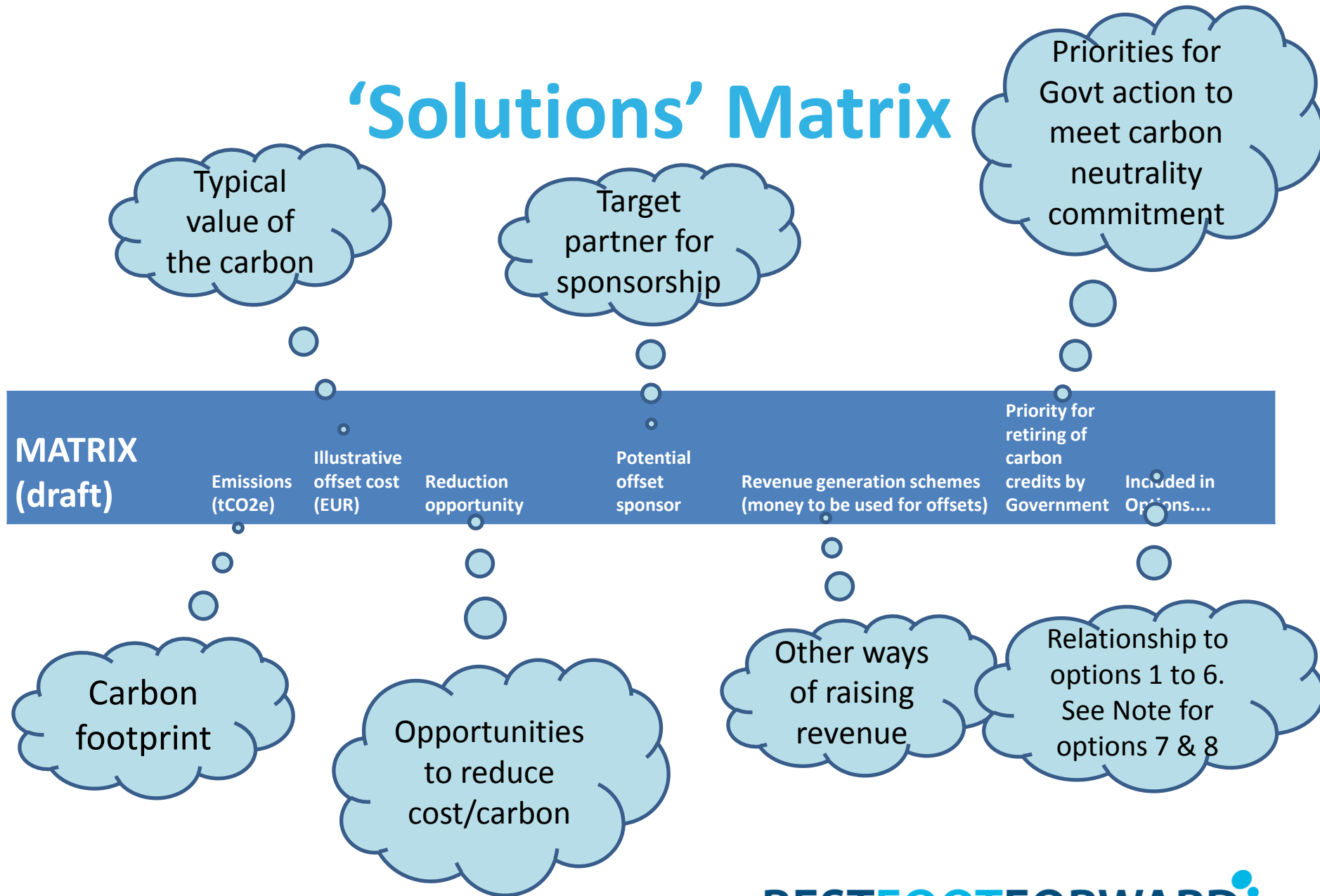


# Alternative Compensation Schemes

(from Eric Matalon)



# 'Solutions' Matrix



# MATRIX ½ (draft)

	Emissions (tCO2e)	Illustrative offset cost (EUR)	Reduction opportunity	Potential offset sponsor	Revenue generation schemes (money to be used for offsets)	Priority for retiring of carbon credits by Government	Included in Options....(see Note for 7 & 8)
<b>Energy</b>							
Power	67,810	438,957	green building strategy, low carbon supply	Energy provider		Yes	1, 2, 3, 4, 5, 6
<b>Air travel</b>							
Media	11,219	72,625		Aeroflot	OR c. 1% booking tax or optional levy on air tickets		2, 4, 6
Staff travel & services (air travel only)	2,970	19,224		Aeroflot		Yes	1, 2, 3, 4, 5, 6
Spectator travel	725,945	4,699,284			c. 1% booking tax or optional levy on air tickets		5, 6
Travel grants (athletes)	4,950	32,041		Aeroflot		Yes	1, 2, 3, 4, 5, 6
Torch relay	517	3,344		Aeroflot		Yes	1, 2, 3, 4, 5, 6
<b>Ground Transport</b>							
Bus and car vehicle fleet	32,649	211,349	specify efficient fleet	Fuel/Vehicle provider		Yes	1, 2, 3, 4, 5, 6
Staff travel & services (ground travel only)	2,614	16,920		Fuel/Vehicle provider		Yes	1, 2, 3, 4, 5, 6
Torch relay and cauldron	454	2,941	specify efficient fleet	Torch relay partners		Yes	1, 2, 3, 4, 5, 6
Spectator road and rail	4,773	30,894			c. 1% local tax on fuel & c.1% booking tax rail tickets		5,6
Workforce & athletes	1,608	10,408		Fuel/Vehicle provider		Yes	1, 2, 3, 4, 5, 6

# MATRIX

## 2/2 (draft)

	Emissions (tCO2e)	Illustrative offset cost (EUR)	Reduction opportunity	Potential offset sponsor	Revenue generation schemes (money to be used for offsets)	Priority for retiring of carbon credits by Government	Included in Options....(see Note for 7 & 8)
<b>Other - SOCOG</b>							
Medical, security etc.	12,750	82,535		Relevant delivery partners			3, 4, 6
Ceremonies & culture	1,125	7,283					3, 4, 6
Overlay (incl F, F & E)	42,750	276,735	rent rather than buy	Relevant delivery partners	OR c. 1% booking tax or optional levy on air tickets		3, 4, 6
Technology	9,750	63,115	rent rather than buy	IT partners			3, 4, 6
Workforce & athletes (excl travel)	34,856	225,637	specify recycled content, low packaging waste	Uniform partner, Catering partner	c. 1% tax on merchandise		3, 4, 6
Staff travel & services (services only)	3,032	19,626		Energy provider		Yes	1, 2, 3, 4, 5, 6
<b>Other - Olympstroy</b>		718,540					
Transport infrastructure (construction)	111,000	238,866			Ticket tax or optional levy (c. 2 EUR per person)		4, 6
Mountain cluster (construction)	36,900	1,698,603			Ticket tax or optional levy (c. 2 EUR per person)		4, 6
Coastal cluster (construction)	262,400	82,535			Ticket tax or optional levy (c. 2 EUR per person)		4, 6

Note: Option 8 includes all emission sources. Option 7 includes all emission sources except spectator travel, accommodation, catering, merchandise and waste. See 'Breakdown of Ownership' slide for summary data.

# What type of carbon credits?

Option H= High M = Medium L = Low	Cost/tCO2e	Reputational risk	Time to develop	Legacy benefit for Russia
<b>Compliance Market</b>				
- JI	M	M	L/M	L/M
- Green investment scheme	L	M	M	H
- CER	M	M	L	L
<b>Voluntary Market</b>				
- VER	H	L	L	L
- REDD	H	L	L/M	L
<b>Local Compensation</b>				
- New Russian offset scheme	M	M	H	H