SUGAR
CO_2 emissions from wine distribution

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OAKDENE HOLLINS
RESEARCH & CONSULTING

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Waste and Resources Action Programme (WRAP)

- 2011: Paint distribution and delivery
- 2008: CO_2 impacts of transporting the UK's recovered paper, PET and HDPE bottles to China
- 2008: Plasterboard take-back using reverse logistics
- 2008:The economic impact of importing bulk wine
- **2007: The life cycle emissions of wine imported to the UK**
- 2005: "Glass collection from licensed premises - reverse logistics of glass containers

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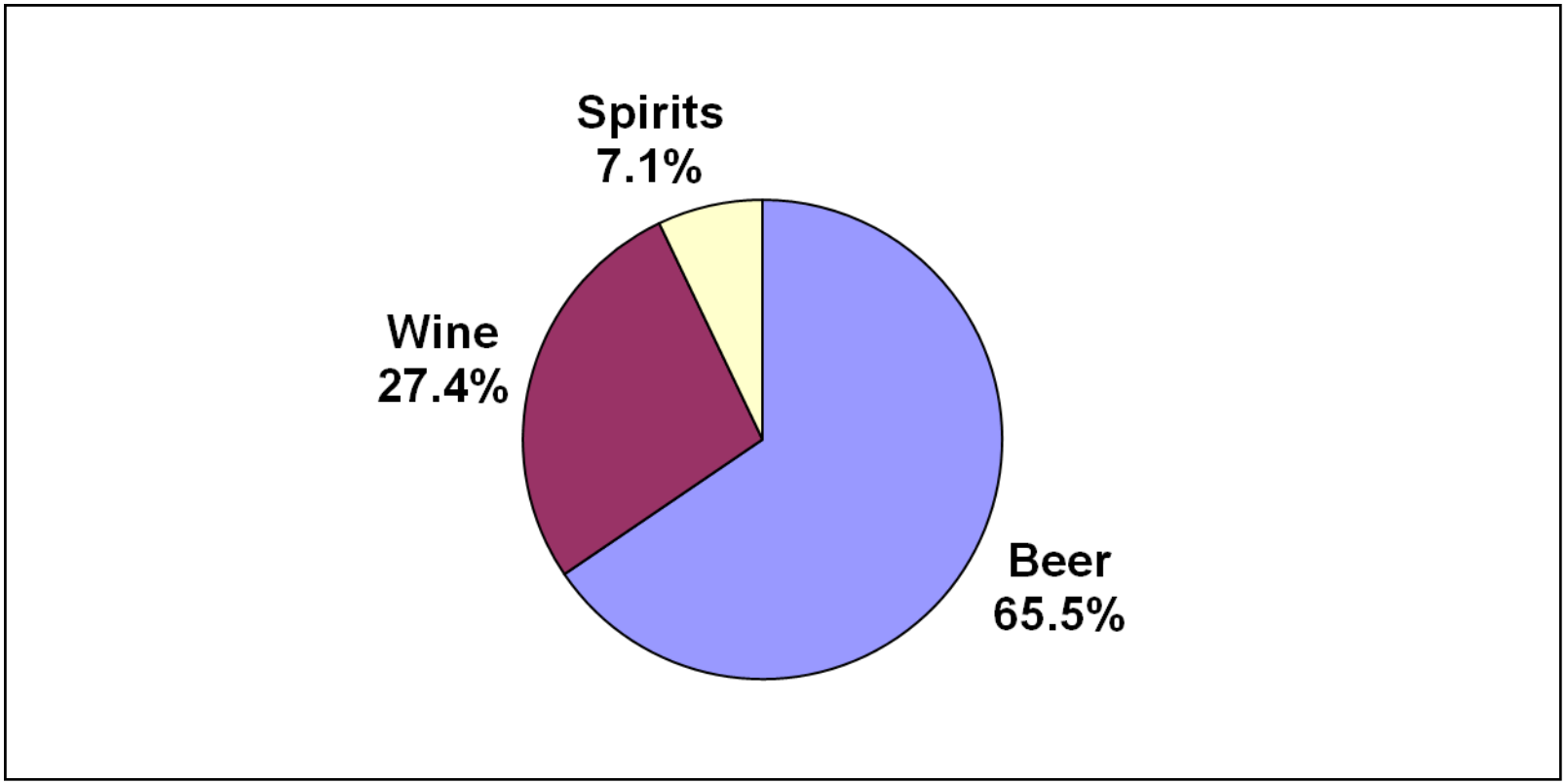
Greenhouse gases by alcoholic beverage



Source: The Food Climate Research Network 2007

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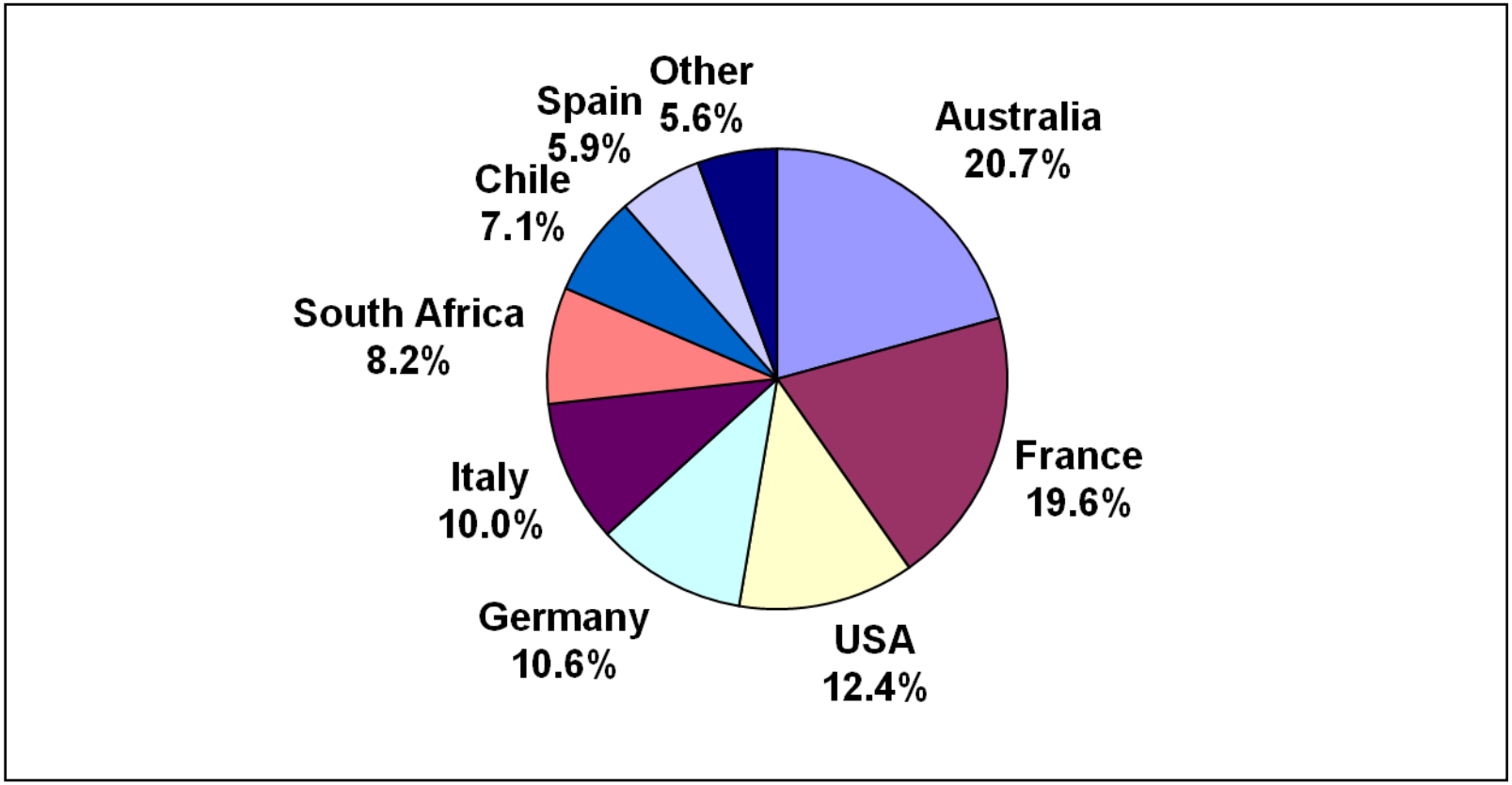
UK wine imports by origin



Source: AC Nielsen 2006

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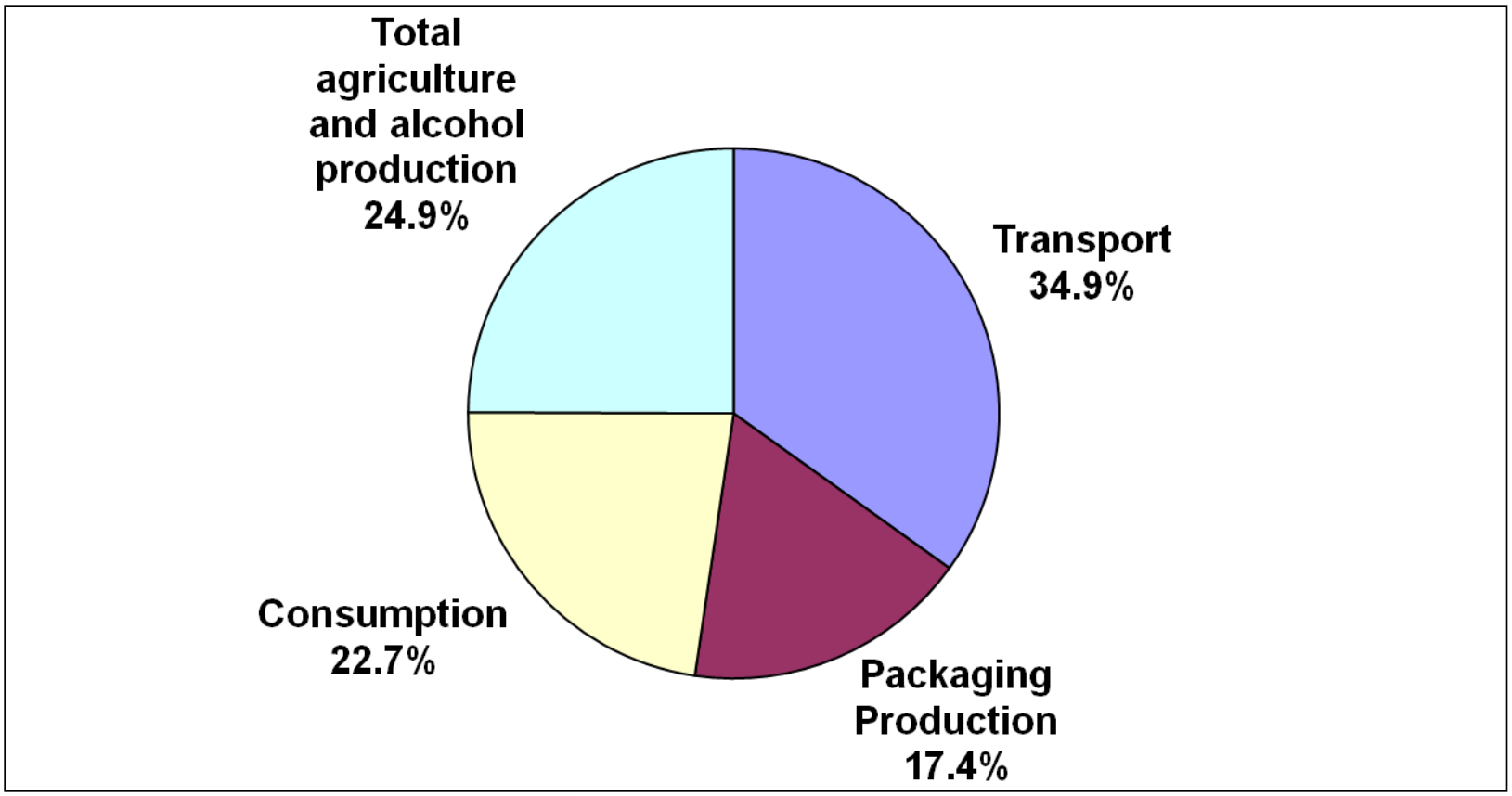
Life cycle emissions of UK wine imports



Source: The Food Climate Research Network 2007

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Bulk wine imports

A growth area: 355 million litres in 2010

- Double the level in 2008
- Over 25% of UK wine consumption

A wine bottle is ½ product's weight

Reduces CO_2 through reduced transport emissions

- Principally focused on New World to UK
- Also New World to Europe to UK

Also bulk import from Europe

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‘Local’ wine imports

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Long haul

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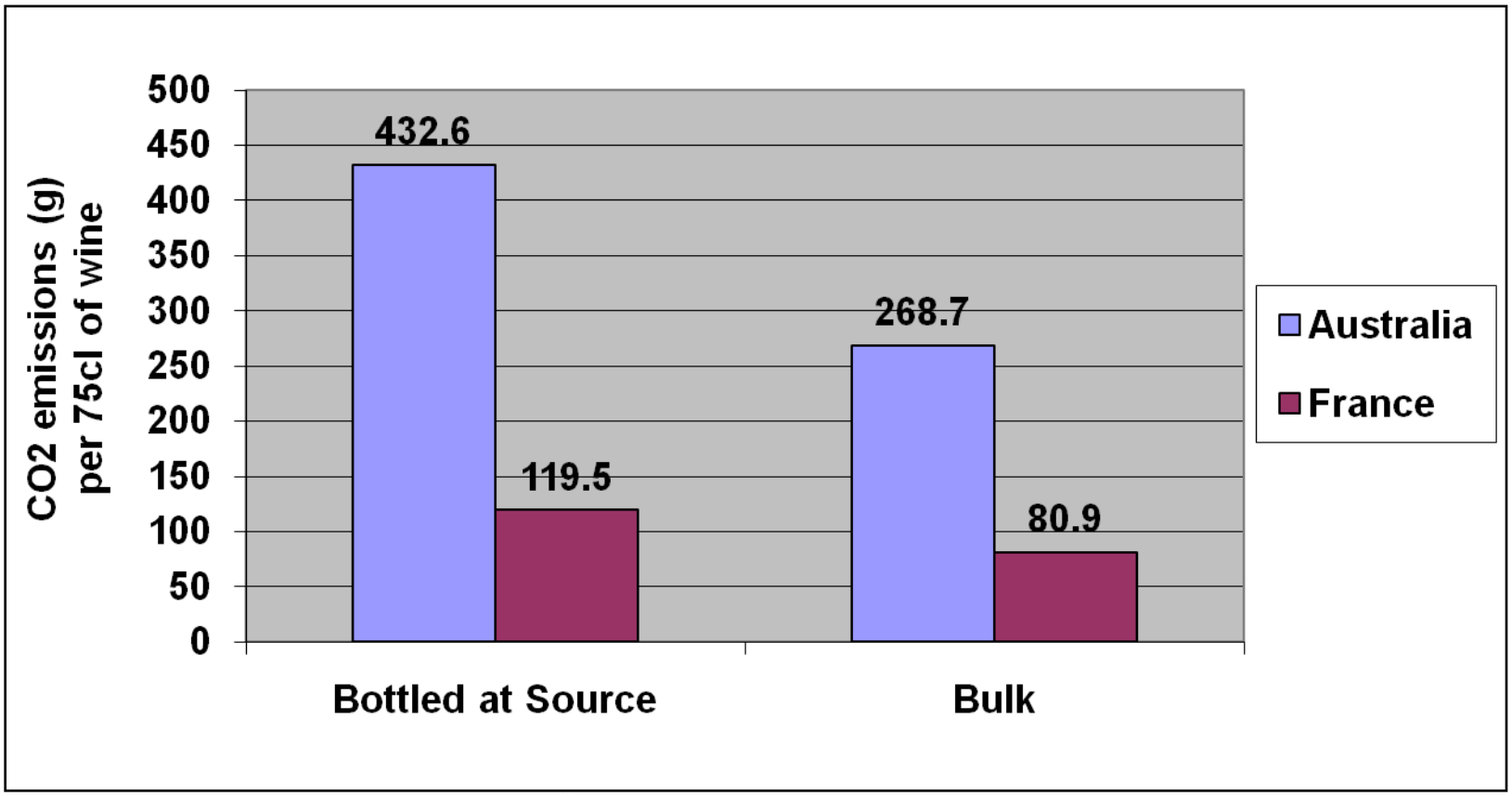
CO_2 emissions from transport



Source: Various; Oakdene Hollins calculation

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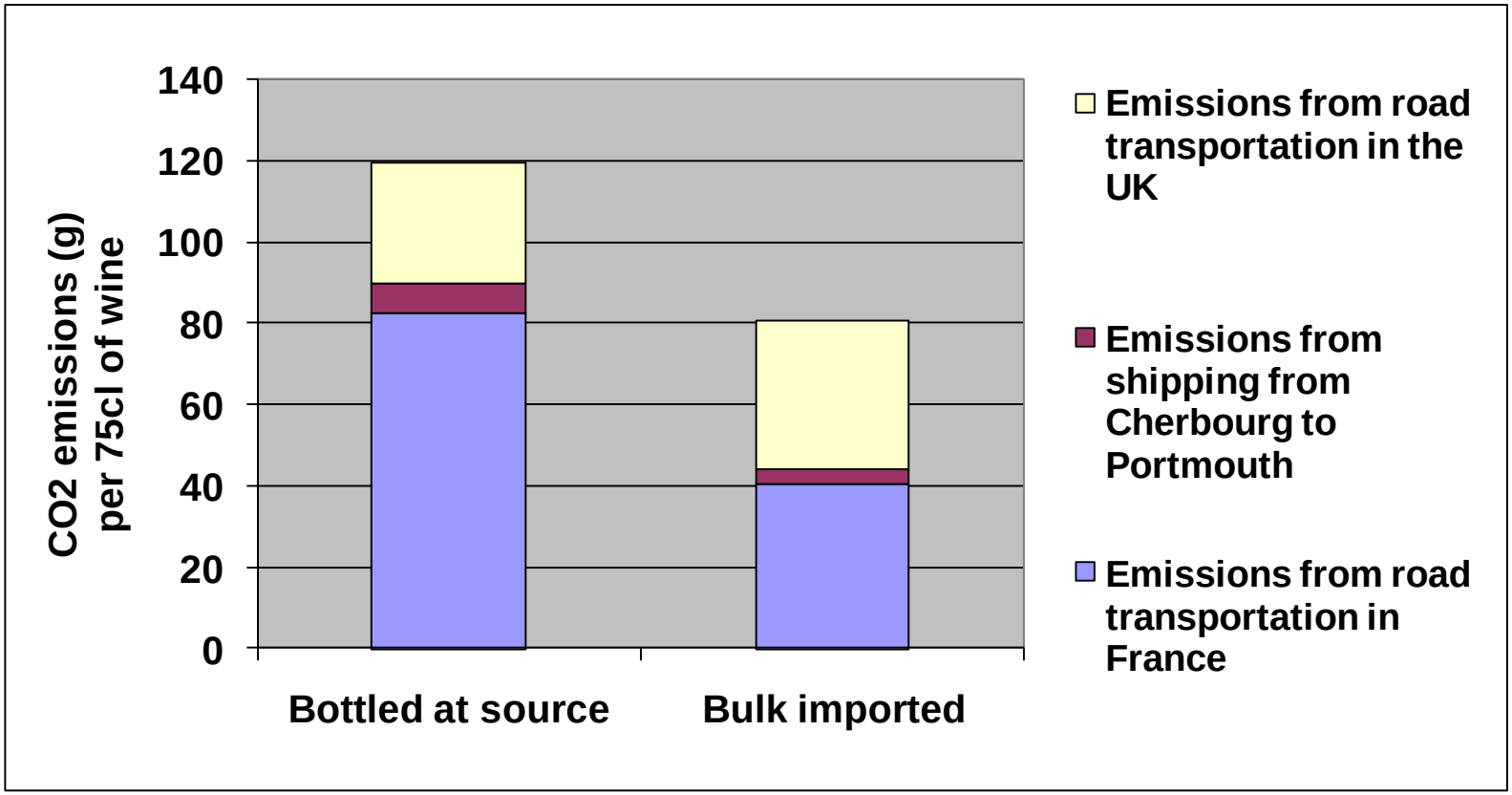
Bulk imports from Europe by ‘road'



Source: Various; Oakdene Hollins calculation

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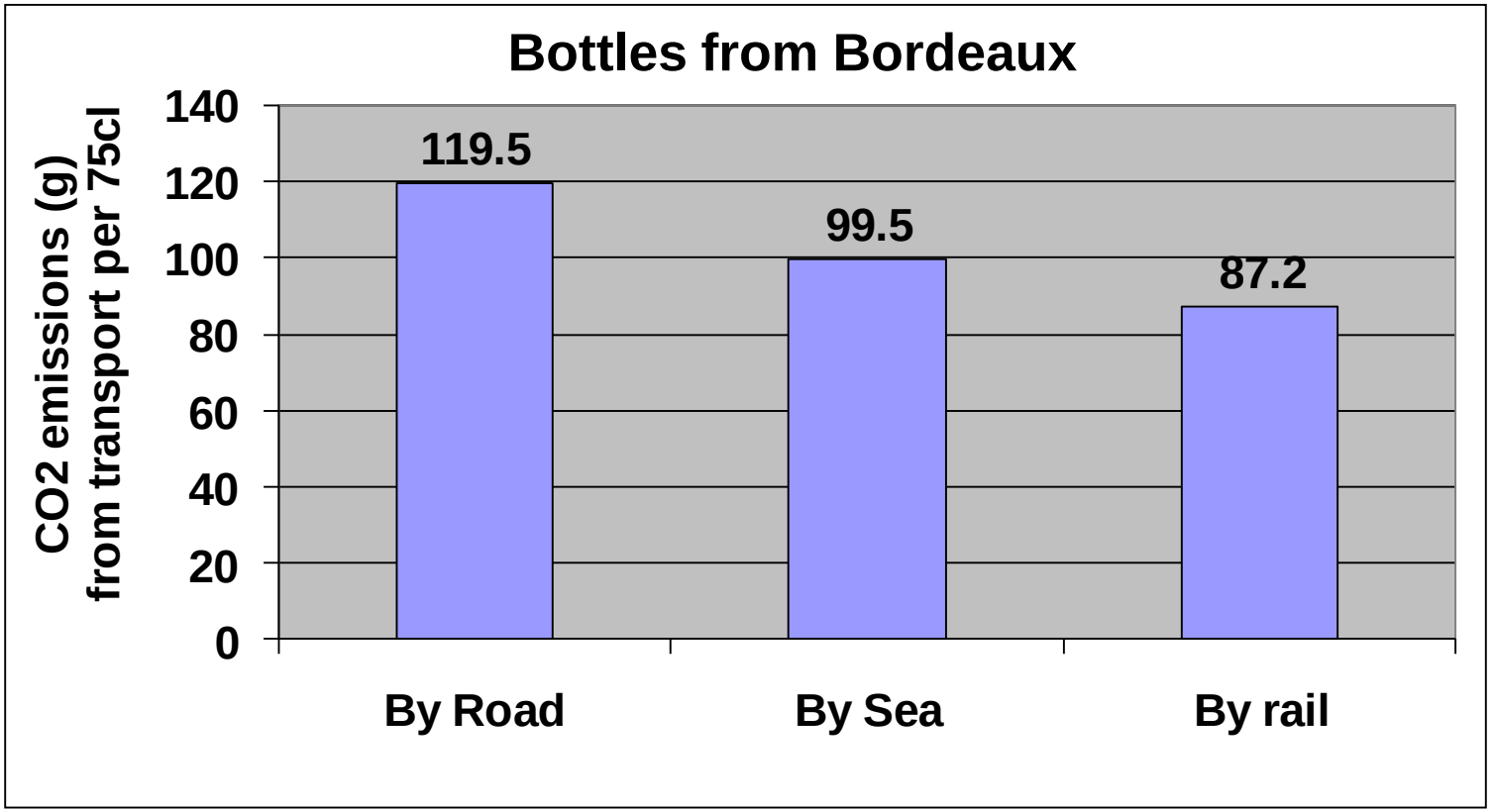
Alternative modes of transport



Source: Various; Oakdene Hollins calculation

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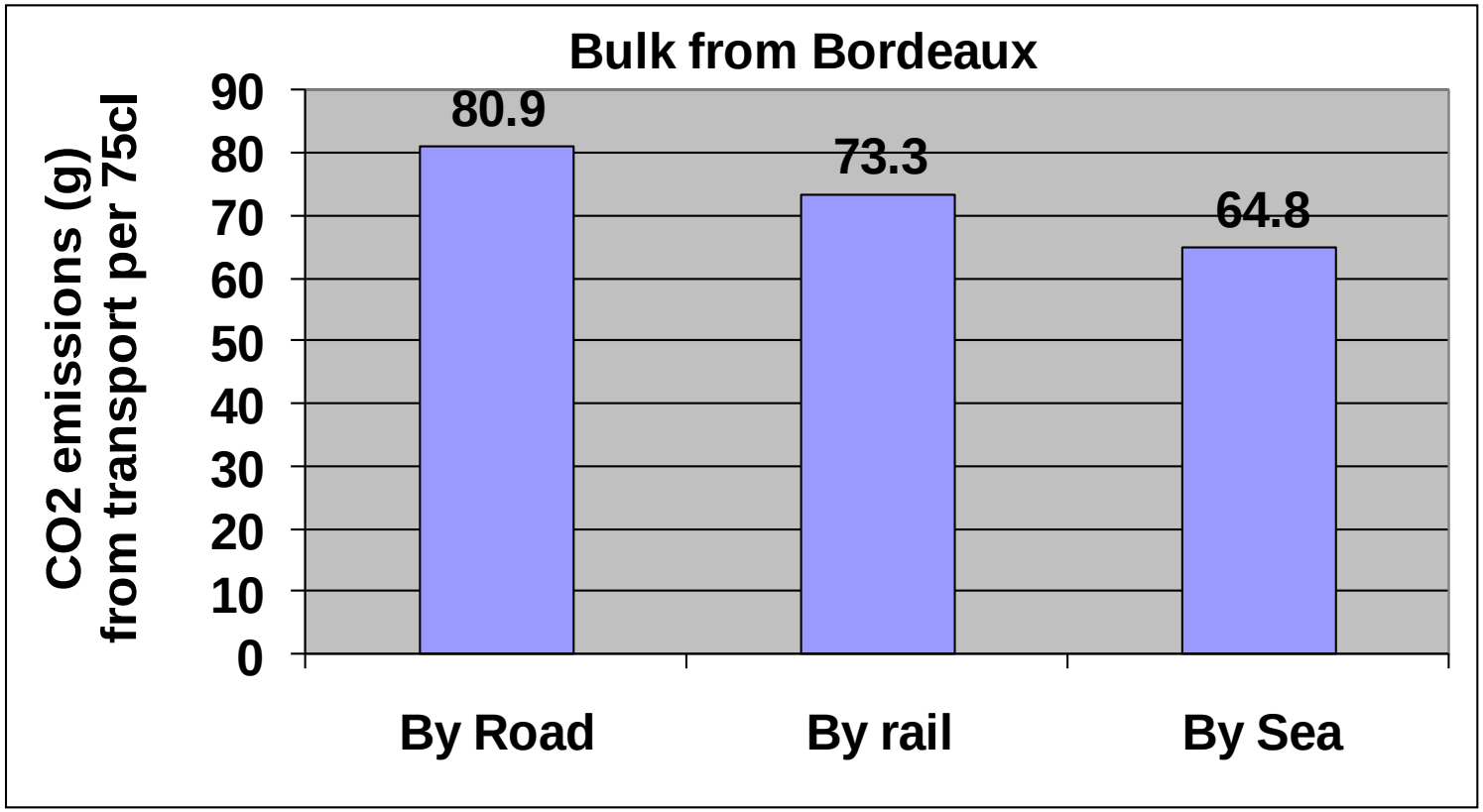
Alternative modes of transport



Source: Various; Oakdene Hollins calculation

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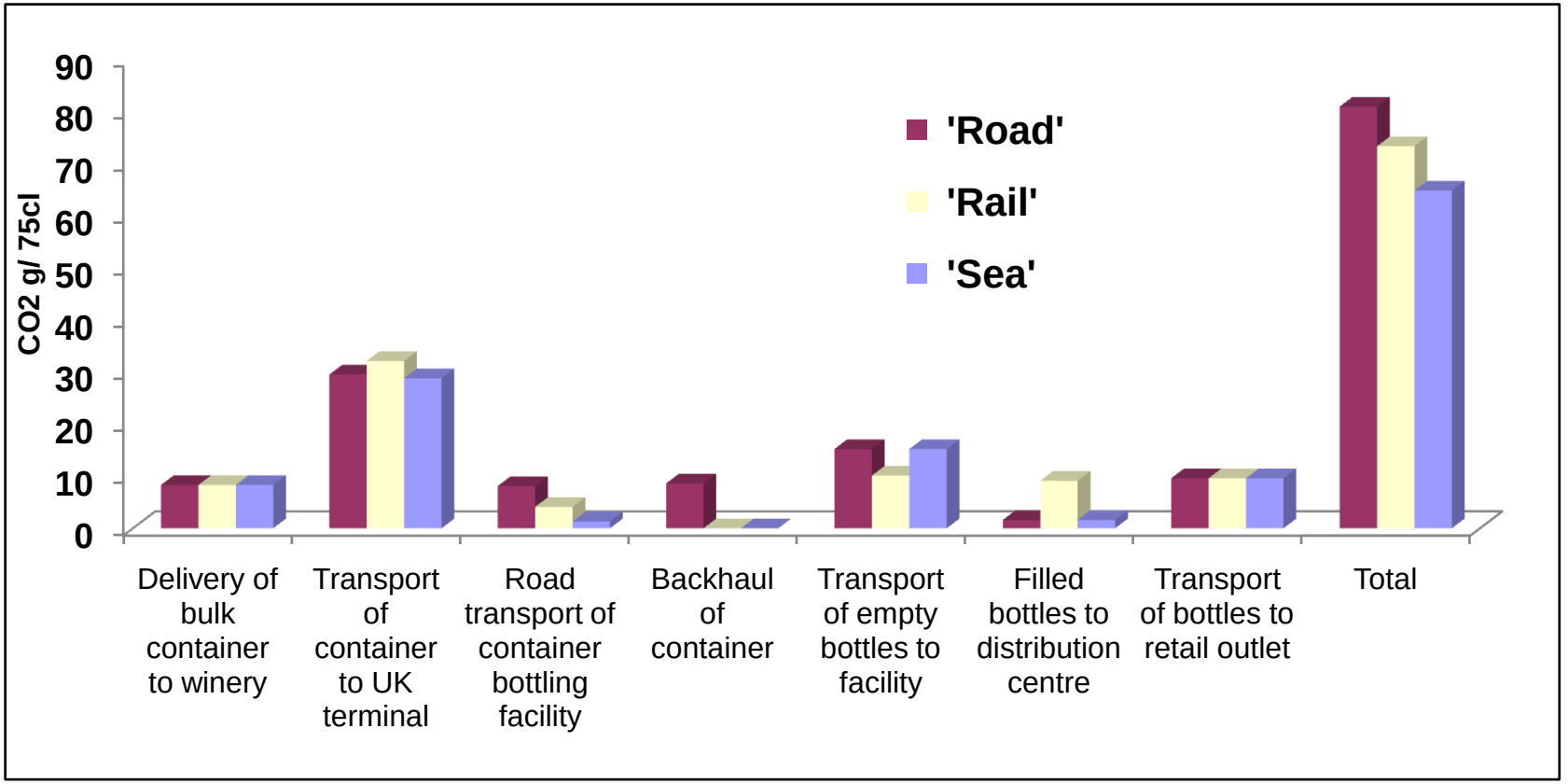
Transport CO_2 emissions from Bordeaux



Source: Various; Oakdene Hollins calculation (see Annex A)

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Conclusions

- Transport accounts for up to 1/3 of LCA emissions from UK wine imports.
- New World increasingly imported in bulk.
- Similar CO_2 savings from European wine imports can be achieved by switching to rail.
- Rail transport of bottled wine from Bordeaux reduces CO_2 emissions from transport by 28% versus road.
- Transport of bottles to retail can be up to 15% of total transport emissions.

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Annex A: Transport CO_2 from Bordeaux

CO_2 g/ 75cl	'Road'	'Rail'	'Sea'
Delivery of bulk container to winery	8.3	8.3	8.3
Transport of container to UK terminal	29.5	32.1	28.8
Road transport of container bottling fac	8.1	4.1	1.3
Backhaul of container	8.6	0	0
Transport of empty bottles to facility	15.2	10.1	15.2
Filled bottles to distribution centre	1.6	9.1	1.6
Transport of bottles to retail outlet	9.6	9.6	9.6
Total	**80.9**	**73.3**	**64.8**

Source: Various; Oakdene Hollins calculation

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Annex B: Eco-labelling

Oakdene Hollins is the UK appointed assessor of applications for EU Ecolabel.

Shift from use-phase to LCA approach.

CO_2 weighting depends on product.

Transport emissions are not currently considered.

Oakdene Hollins currently investigating the opportunity for applying to food products.

Under such a scenario the transport type and distance of wine could become relevant but difficult to measure and apply.

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