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Environmental Benefits of Recycling

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An introduction to WRAP

- Waste & Resources Action Programme.
- Established by the Government in 2000.
- To help everyone in the UK recycle more, waste less and reduce the amount we send to landfill.
- Reducing CO_2 emissions.

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Helping to close the loop

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Working together

Up until now WRAP and its partners have delivered significant achievements:

5.8 million tonnes/year reprocessing capacity

8.5 million more 'committed recyclers'

1.6 million home compost bins sold

1.3 million tonnes less carbon emissions

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Working together

But there is more that we plan to deliver during the current business plan:

4 million more committed recyclers

500,000 more households composting at home

100,000 tonnes less rubbish from the UK population p.a

220,000 tonnes extra recycled material in products p.a

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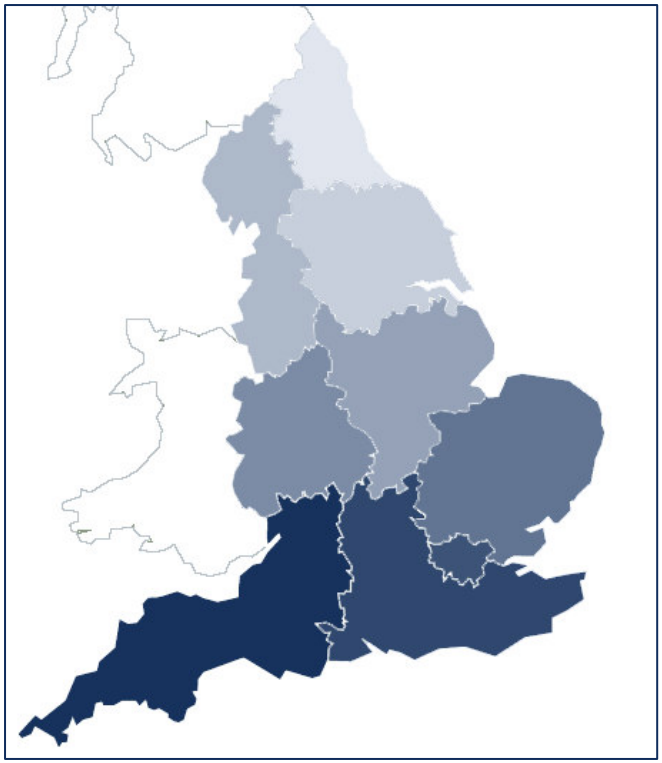
Working with the English regions

- Working with regional partners
  in the nine RDAs to ensure good
  access to WRAP expertise
  and services on the ground.
- Supporting regional partners in identifying priorities for recycling
  and market development .
- Delivering support to help SMEs recycle through Recycle at Work Advisers based in the regions.



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WRAP programmes

Construction

Helping the Construction sector and their clients to use resources more efficiently and reduce waste.

Manufacturing

Commercialising the use of recycled materials in place of virgin products.

Business Growth

Growing a successful recycling sector and helping businesses recycle and use recycled products.

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WRAP programmes

Organics

Supporting compost producers and growing markets for compost products.

Retail

Working with retailers and their supply chains to reduce waste and encouraging recycling.

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WRAP programmes

Behavioural Change

Communicating recycling and waste minimisation to consumers through advertising and PR, at local and countrywide levels.

Local Authorities

Supporting Councils in their work to deliver better recycling services and more waste reduction.

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Which is the best way of handling waste?

Telegr

Home
News home
UK Politics
Obituaries
Picture galleries
How about that?
News topics

Announcements
Arts
Blogs
Comment
Crossword
Dating

Topic Code 23

Is Landfilling Better Than Recycling?

The proposal by the hard-pressed government of New York City to suspend its recycling program for a year is a direct result of the high cost of recycling. At around $300 per ton, the cost has proven to be well in excess of the $65 per ton figure that was originally estimated. True, the program has been plagued by labor problems and la low level of citizen participation, but it is wishful thinking to believe that either more cooperation from sanitation unions or the achievement of greater civic support and a higher recycling rate will bring the cost of recycling down to an acceptable level.

Curbside recycling programs across the U.S. typically cost far more than landfilling, frequently twice as much, even when sales revues and avoided waste disposal costs are included in the calculation. On a strictly economic basis, large-scale recycling is simply wasteful, leaving taxpayers and users of solid waste disposal services paying a larger bill. The frenzied national push for recycling is largely the result of grossly mistaken beliefs about landfilling and the magnitude of the disposal problem, together with a seriously flawed decision making process in the siting of landfills.

What most people don't know about landfills could fill a landfill. At the current rate, if all the nation's solid waste for the next 500 years were piled or buried in a single landfill to a dept of 100 yards—about half the eventual height of Staten Island's Fresh Kills landfill—this "national landfill" would require a square site less than 20 miles on a side. With compaction, even this volume could be halved.

Most people also don't know that the amount of solid waste generated nationally has grown

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AN INTERNATIONAL REVIEW OF LIFE CYCLE ASSESSMENTS OF WASTE DISPOSAL AND RECOVERY OPTIONS

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International Review of Life Cycle Assessment

Assumptions

Conflicting Findings

Critical Factors

Why review LCA?

Decision support tool

Provides a snapshot comparison between two or more options (e.g. disposal routes, material choices).

Reviews a number of environmental criteria

Peer reviewed

International interest in life cycle thinking

ISO 14040:2006 Principles and framework

ISO 14044:2006 Requirements and Guidelines

The EU Thematic Strategy on the Prevention and Recycling of Waste anticipates bringing new environmental thinking and life-cycle thinking into waste policies

Revised Waste Framework Directive (75/442/EEC) links waste to resource life-cycles.

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Requirements for inclusion

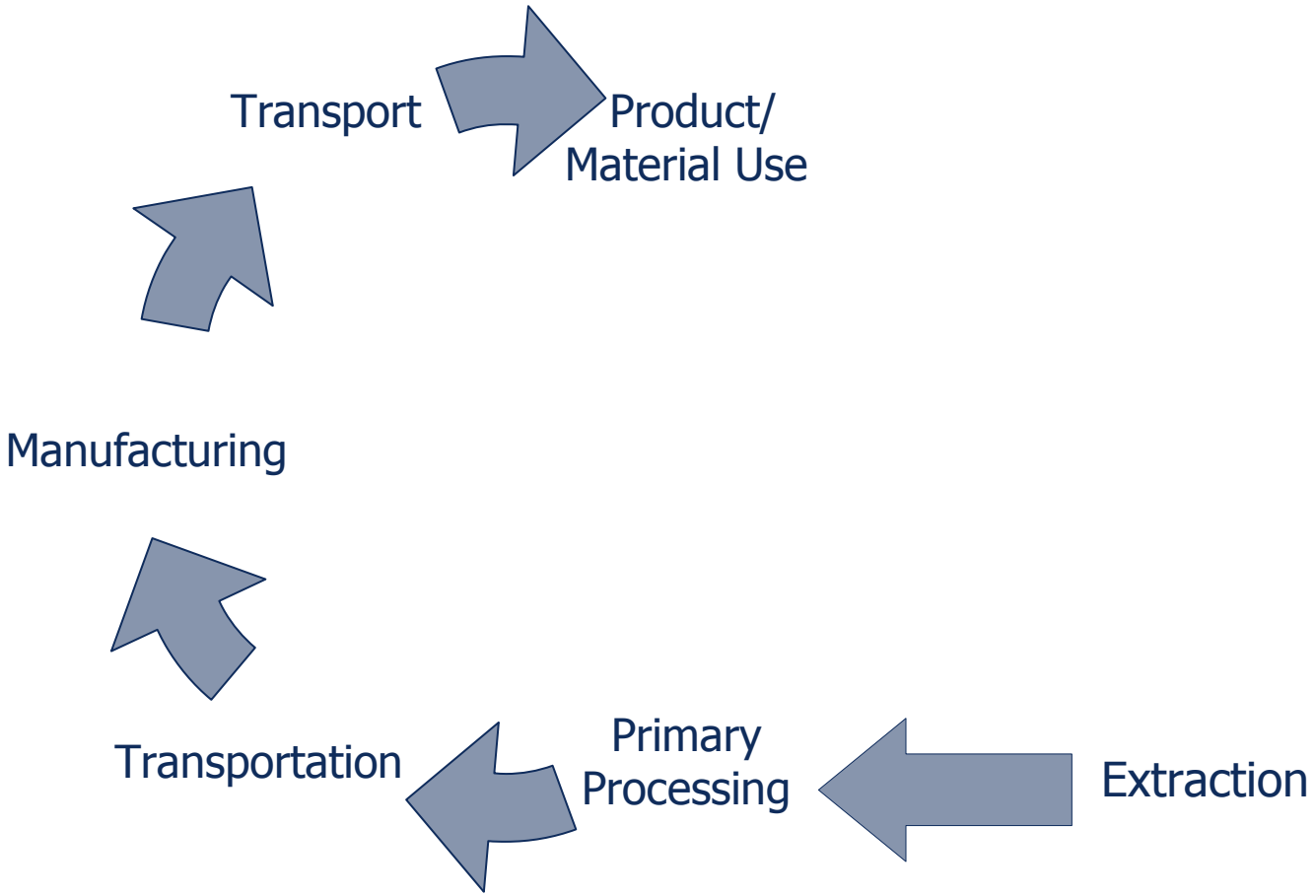
Holistic LCAs

ISO 14040 standard methodology

Unambiguous

Comparative.

Requirements for inclusion



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International Review of Life Cycle Assessment

272 studies reviewed

55 found to be of sufficient quality for review

201 scenarios assessed across key impact categories

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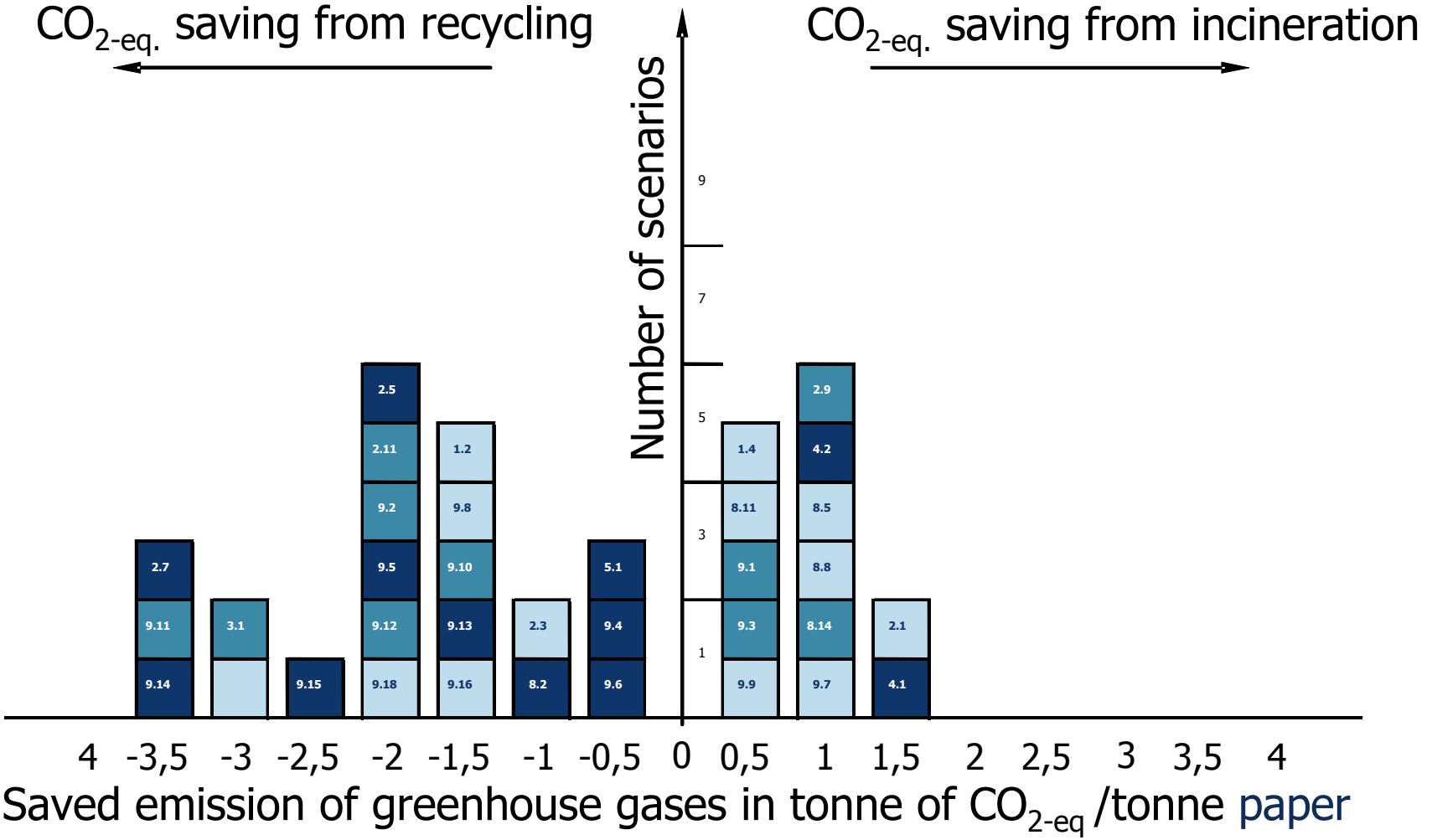
Paper
Recycling Vs. Incineration



X.Y Newsprint, newspapers, magazines

X.Y Mixed paper, graphic paper, office paper

X.Y Corrugated board and other cardboard

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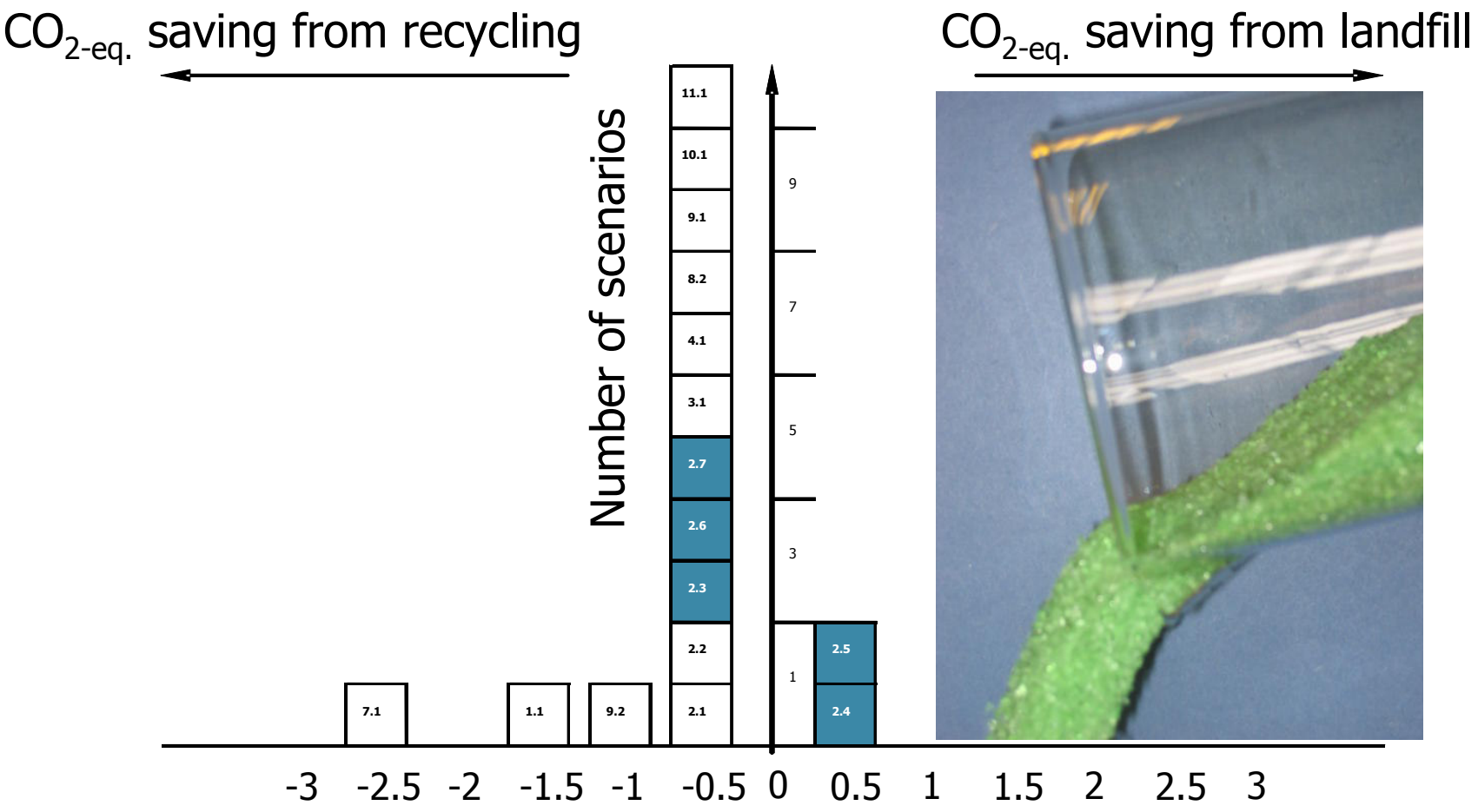
Glass

Recycling Vs. Landfill



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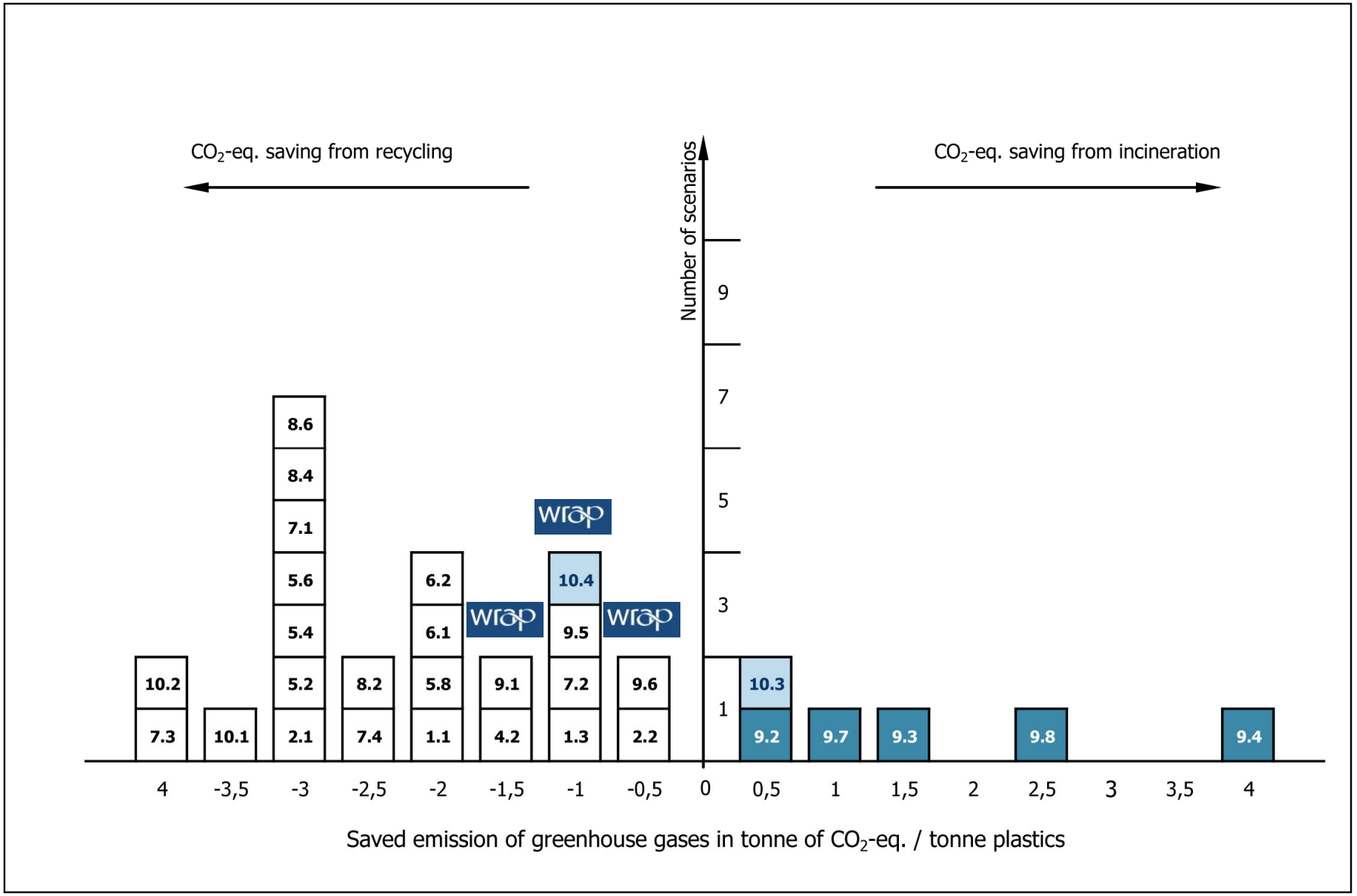
Plastic
Recycling Vs. Incineration



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Aluminium and Steel

Recycling one tonne of aluminium saves 7 tonnes of CO2 equivalent

Recycling one tonne of steel saves 1.28 tonnes of CO2 equivalent

Compared to baseline of 88% waste landfilled, 12% sent for energy recovery.

Aggregates and Wood: insufficient research

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Savings from Recycling

18

million tonnes of CO2 per year

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Critical assumptions

Expected Variations

Waste Handling

Energy consumption

Other Critical assumptions

Timescale

Data Type:

- Marginal
- Average
- Specific
- Quality –Age
- Source

Nature of markets – Global or Local

Energy Displaced

Functional Unit

Shortcomings of LCA

Does not include economic evaluation – use in combination with other tools.

Accounts for potential impacts rather than actual impacts.

Static comparison- forecasting requires more assumptions.

How to address offsetting/renewables

ISO 14040 requires transparency, not consistency.

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Shortcomings of LCA-interpretation

Impact Category	PS	PP	PET
Fossil Resource Consumption	211%	243%	317%
Global Warming	60%	30%	93%
Summer Smog (POCP)	31%	62%	440%
Acidification	85%	147%	15%
Terrestrial Eutrophication	114%	137%	14%
Carcinogenic Risk	2115%	129%	6145%
Human Toxicity (PM10)	106%	160%	3%
Aquatic Eutrophication	1140%	14%	540%

Note: Percentage values are calculative differences derived from the net indicator results with the smaller value being the mathematical denominator.

Pair-wise comparison of alternative clam shell systems with PLA clam shells

Green = an advantage for PLA, red = a disadvantage for PLA

Source: Life Cycle Assessment of POLYLACTIDE (PLA) A comparison of food packaging made from NatureWorks® PLA and alternative materials, IFEU Heidelberg July 2006

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WRAP further research

Aggregates

Plastics

Tyres

Medium Density Fibreboard

Mixed Plastics

Plasterboard

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Why are we recycling?

© Envirowise

Legislation

The 'Waste Mountain'

Population Growth

Pressure on natural resources

Inequalities

Climate Change

What is the next issue?

The possibilities are endless

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Conclusions

Appropriate Use

Snapshot of a specific system

Waste Hierarchy

Boundary Assumptions

Data Gaps

Credit

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Learn more

Get more information about WRAP and its programmes:

Website: www.wrap.org.uk

WRAP Helpline: 0808 100 2040