

EUROPEAN RESOURCE HIERARCHY

DISCUSSION PAPER



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THIS DISCUSSION PAPER INTRODUCES THE NEW IDEA FOR A *EUROPEAN RESOURCE HIERARCHY* TO: PROVIDE A WHOLE-LIFE FRAMEWORK FOR THE STEWARDSHIP OF NATIONAL/GLOBAL NATURAL CAPITAL THROUGHOUT THE PRODUCTIVE ECONOMY ■ ADDRESS MARKET FAILURES ASSOCIATED WITH RESOURCE USE OVER THE ENTIRE SUPPLY CHAIN ■ CONTRIBUTE TO THE ESTABLISHMENT OF A VIBRANT CIRCULAR ECONOMY AND PROGRESS TOWARDS SUSTAINABLE RESOURCE MANAGEMENT.

BACKGROUND

1. The Stern Review concluded climate change represented: “*the greatest market failure the world has ever seen*”; waste perhaps represents the second. Since the Industrial Revolution, most economic activity has followed linear patterns of production and consumption, traditionally supported by cheap and plentiful virgin resources (e.g. coal and minerals etc.), reinforcing the ‘take-make-consume-dispose’ model.

A PROBLEM OF FOCUS

2. Since its origins (early ‘70s), European environmental legislation importantly centred on the control of waste to protect human health and avoid environmental pollution. The European ‘waste hierarchy’ ranks waste management options according to what is best for the environment, where highest priority is given to waste prevention followed in descending order by: re-use, recycling, recovery, and finally disposal (e.g. landfill). However, whilst subsequent EU-Environmental Action Programmes have brought more policy prominence to sustainable production and consumption, many of the underlying policy principles remain waste-centric.
3. Strengthening waste legislation to achieve greater progress towards sustainable resource management has become increasingly misaligned. Indeed, it is highly questionable whether this can be delivered through the current waste hierarchy, where policy interventions adhere to a rather dogmatic focus on ever higher end-of-life recycling targets, but where these exert little influence on the upstream supply chain. Neither can the necessary systemic change be left to market forces (e.g. recent claims that users of recycled plastic are switching back to virgin polymers, as the former’s value falls due to low oil prices.)

A EUROPEAN RESOURCE HIERARCHY: FIT FOR THE CIRCULAR ECONOMY AGE

4. This discussion paper introduces the new idea for a *European Resource Hierarchy*¹, based upon a whole-life framework for the stewardship of national/global natural capital use throughout the productive economy. This would bring a fundamental policy shift, to embed resource circularity within the productive economy (see page 3 for hierarchy diagram, table of terms used and wider supporting text). In the circular economy, extracted resources would be beneficially retained within the productive economy, preferably indefinitely, where economic growth is ‘decoupled’ from the rate of natural resource consumption. It is envisaged that through transitional arrangements, an EU-Resource Hierarchy could supersede the EU-waste hierarchy.

¹ http://www.eden21.co.uk/images/EUROPEAN_RESOURCE_HIERARCHY.pdf

5. Our ability to measure finite resource flows across national/European/international boundaries and through major economies is improving. Natural capital depletion and the degree of non-circularity within the productive economy are also better understood, as is our capacity to measure and mitigate associated releases into the biosphere, within environmental limits. Adherence to the EU-Resource Hierarchy would necessitate a holistic and systemic shift, enabling legislative, regulatory, voluntary and fiscal interventions to be aligned to:
 - I. Resource targets which address natural capital depletion in the productive economy and progress towards (national) sustainable resource management.
 - II. Measuring Member States' progress via annual environmental accounts, which in turn inform subsequent amendment to resource targets.
 - III. Urgently address supply chain blockages associated with resource use within the productive economy and throughout their entire life-cycle.
 - IV. Incentivise the entire supply chain towards closed-loop manufacture, in the transition towards a vibrant circular economy.

EUROPEAN COMMISSION SUBMISSION

6. Functionality is central both to the European Commission's circular economy package (promised later this year) and its longer-term vision for 2050, as laid out in the 7th Environmental Action Plan. This concerns living within the planet's ecological limits, where prosperity and a healthy environment stem from an innovative circular economy.
7. The UN Environment Programme projects global demand for raw resources could treble by 2050. Even under their moderate contraction and convergence scenario, with significant decoupling of virgin resource consumption, extraction would still be 40% higher compared to 2000 levels. Concurrently, other priorities will need to be met including: climate change adaptation, enhancing biodiversity and protecting our last remaining wild places.
8. In summary, this proposed is intended to initiate discussion and stimulate lively debate on the role for a European Resource Hierarchy, both in delivering a vibrant circular economy and sustainable resource management. As such, its use could potentially underpin a fundamental shift in European policy thinking.
9. On 21st April 2015, the idea for a new European Resource Hierarchy was submitted to European Commissioner Karmenu Vella for consideration by DG-Environment, Maritime Affairs and Fisheries.

ABOUT THE AUTHOR

10. This discussion paper has been developed by Dr Stuart McLanaghan, a Resource Management Professional and member of British Standards Committee *ES/10/1 Sustainable Resource Management*. He has advised the UK Prime Minister's Strategy Unit, Cabinet Office on new and emerging technologies to deliver the EU-Landfill Directive and played a formative role in Defra's New Technologies Demonstrator Programme. Dr McLanaghan has a PhD in environmental management from Imperial College, London and is a Chartered Waste Manager. In October 2011, he became a BBC *CountryFile* Food Hero for his ethical wild food interests.

DIAGRAM: EUROPEAN RESOURCE HIERARCHY

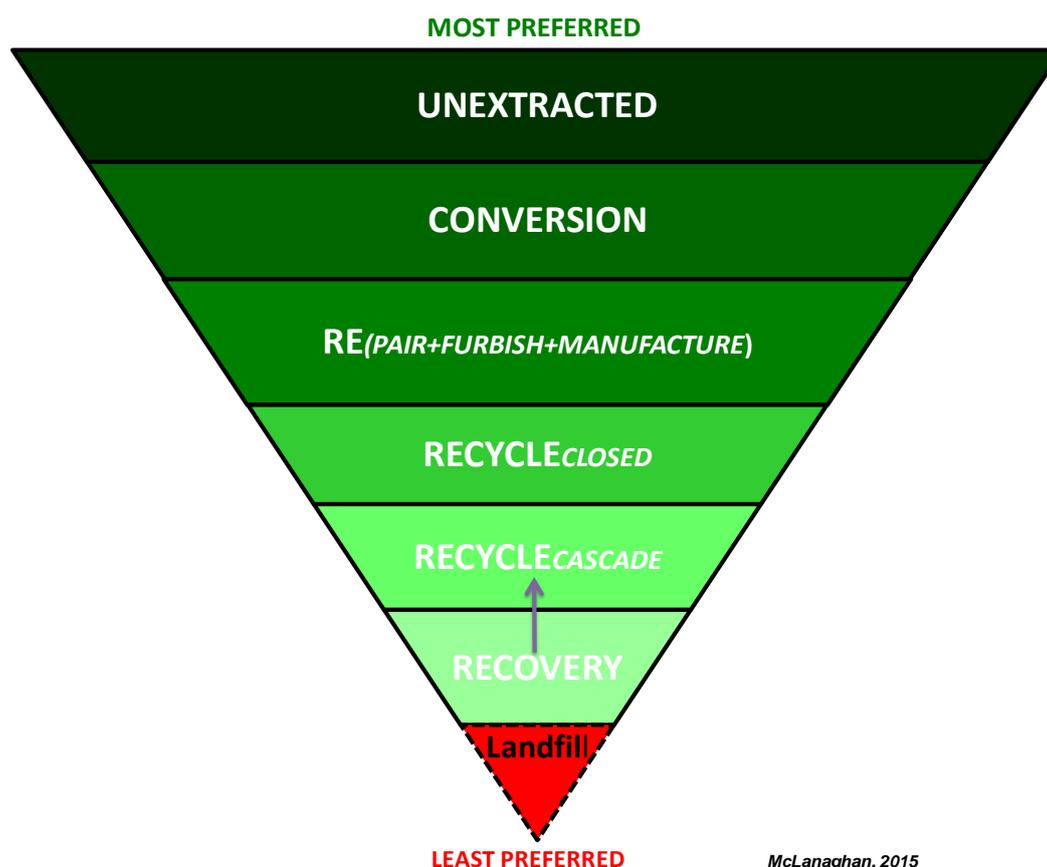


TABLE OF TERMS

RESOURCE HIERARCHY TIER	DESCRIPTION
UNEXTRACTED	Virgin resources in the biosphere; unextracted natural capital reserves (e.g. minerals and ores) whether proven, or otherwise.
CONVERSION*	Conversion of extracted resources into products and services (e.g. via manufacture.)
RE (PAIR+FURBISH+MANUFACTURE)	Products that undergo repair, refurbishment or remanufacture, resulting in their retained use within the productive economy.
RECYCLE _{CLOSED}	Closed-loop recycling within the original manufacturing facility or sector, for the same or similar purpose.
RECYCLE _{CASCADE}	'Cascade recycling' or 'down-cycling': resources recycled after product 'end-of-life' in different value streams. As resources descend the cascade their value declines (entropy increases.)
RECOVERY	Nutrient leakage into the biosphere is minimised by restricting energy recovery to resources from which all further cascade recycling has been exhausted. The arrow to cascade recycling from recovery represents any subsequent resource use in manufacture (e.g. inert ash used for secondary aggregates.)
LANDFILL	In the circular economy waste does not exist and resources would not be landfilled, other than for subsequent storage/ mining. Transitionally, some landfill will be required, but only when all cascade recycling opportunities have been exhausted.

* An interim 'extraction' step exists before conversion, but is not shown above

THE EUROPEAN RESOURCE HIERARCHY: SUPPORTING NOTES

The European Resource Hierarchy:

- ✓ Centres on resource use presented in descending order of preference; starting with unextracted virgin resources (i.e. technical and biological nutrients) present in the biosphere. Ascending the European Resource Hierarchy is environmentally preferable.
- ✓ Is intended for practical interpretation and use as a framework for policy and decision makers.
- ✓ Proposes a fundamental policy shift towards whole-life resource considerations, rather than using end-of-life product measures to strengthen waste legislation and ascend the waste hierarchy.
- ✓ Reflects a policy transition from recycling targets to resource targets that better reflect extraction and depletion rates of natural capital flows, and their leakage away from the productive economy.
- ✓ Is intended to catalyse greater legislative and regulatory harmonisation between the needs of business and the protection of the environment, where the circular economy and natural capital reserves are concerned.
- ✓ Will require both EU-transitional arrangements away from the waste hierarchy and the production of guidance for interpretation by individual Member States.
- ✓ Will still require necessary controls to protect human health and avoid environmental pollution. However, minimal restrictions associated with waste legislation would be expected above cascade recycling activities. This is due to resource and product considerations; where the holder neither discards, nor intends to discard, or is not required to discard.
- ✓ Is not intended to be interpreted rigidly. In instances where independent evidence (e.g. Life-Cycle Assessment studies) can show that greater environmental benefits would result, a lower-tier hierarchy option can take precedence.
- ✓ Resources are deemed to reside within the productive economy when located at any level between conversion and recovery.

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