

A Key Solution to Climate Change: Sustainable Materials Management

Association of Cities and Regions for sustainable Resource management (ACR+)

ACR+ is an international network of members in EU 28 and EU neighborhood countries who share the aim of promoting smart resource consumption and production and sustainable management of waste mainly through prevention at source, reuse and recycling.

The association has nearly 100 members, mainly local and regional authorities, representing approximately 1400 municipalities, as well as NGO's, academics and private sector.

- ❖ **ACR+ favours to greatly enhance sustainable resource efficiency:** the vision is that a Circular Economy (CE), where less resources are needed to satisfy our needs and where products are designed for durability, ease for reuse, disassembly, remanufacturing and recycling should replace the traditional, linear 'take, make & dispose' model that has dominated the economy so far. This, no doubt, is a major prerequisite to stay within the Planetary Boundaries. Simply put: we are in urgent need of absolute decoupling between fulfilling our needs and our impact on the environment, or put in other words, a transition to a circular economy.
- ❖ **ACR+ provides a platform owned and led by Local & Regional Authorities (LRAs) that demonstrates leadership in the field of circular economy public strategies:** the Circular Europe Network (CEN). The CEN builds on the expertise of European front runners in order to gather, analyse and exchange information on efficient circular economy strategies implemented by cities and regions.
- ❖ **ACR+ emphasises the essential role of LRAs as key actors for the transition to sustainable, low carbon societies:** they are the ones that actually facilitate, coordinate and support sustainable practices locally and regionally. LRAs are furthermore in direct contact with all local stakeholders, including citizens who are also consumers. This is particularly important: for transformation to succeed in regions, towns and districts, all major groups need to be involved, across all ethnic, confessional and gender groups.
- ❖ **ACR+ highlights the need for a Life-cycle approach for accounting greenhouse gas (GHG) emissions from materials & waste:** although GHG emissions from the waste sector typically account for around 3% of total emissions in EU countries' GHG emission inventories, this emission source only considers direct emissions primarily from landfill methane emissions. In contrast, a life-cycle approach of materials management-related GHG sources encompasses emissions from the design, production, consumption, and end-of-life treatment of physical goods in the economy, accounting for 55% to 65% of national emissions for most EU countries.¹
- ❖ **ACR+ acknowledges** that EU GHG emissions from waste end-of-life treatment, responsible for slightly less than 3% of the overall GHG emissions, decreased by >25% from 2004 to 2012 in the EU mainly because of less landfilling (from 47% in 2004 to 33% in 2012)²

¹ Greenhouse Gas Emissions and the Potential for mitigation from materials management within OECD countries, Working Group on Waste Prevention and Recycling, OECD, 2012

² SOER 2015, European Environmental Agency

and more recycling and composting (from 36% in 2008 to 42% in 2013)³. The main source of waste related emission is solid waste disposal in landfill with over 76% of the total, followed by wastewater handling with 19%, while incineration was responsible for less than 3% of emissions from the waste sector⁴, although incineration means the loss of valuable resources.

- ❖ **ACR+ notes** that relative decoupling of economic growth from resource use has been possible over the past decades; but the gains made so far have been rapidly eaten up by a combination of economic growth and the so-called rebound effect (increased efficiency versus increased consumption).

³ Sustainable Development in the European Union 2015 Monitoring Report of the EU Sustainable Development Strategy, Eurostat 2015

⁴ Greenhouse Gas Emissions and the Potential for mitigation from materials management within OECD countries, Working Group on Waste Prevention and Recycling, OECD, 2012

- ❖ **ACR+ stresses the large challenges the Southern & Eastern Mediterranean countries face:** an increased demography, rapid coastal urbanisation, increasing risk of erosion and desertification of agricultural soils, steadily increase of per capita waste generation and high reliance, despite efforts made in the past decade, on uncontrolled landfills burying large quantities of organic materials. Recycling and composting rates are very low. The share of waste in the overall emissions are therefore higher, namely from 5 to 10%, and thus the margin for potential gains through improved waste management practices are high. However, circular economy principles (reduce, reuse, repair, recycle) in the region are largely embedded – at an unknown scale - in society and therefore the numerous formal and (even more) informal SME's dealing with material management need to be supported politically, regulatory and economically.

ACR+ further on notes that...

- the majority of GHG reduction benefits from recycling (including composting and anaerobic digestion) or waste prevention come from the energy savings from avoided resource extraction and materials processing
- improving the durability, adaptability, and potential reusability for products and their components can extend product life spans, requiring less material input and reducing waste and GHG emissions
- maximizing the ease and frequency of product disassembly, recycling, and/or transformation for further productive use can also yield significant benefits
- using improved distribution practices (including transportation reduction) and promoting the reuse and recycling of products and their components through closed-loop approaches can further reduce waste and GHG emissions
- prevention-oriented approaches can significantly reduce emissions from the food production & consumption system through source reduction of food wastage and effective management of food wastes and agricultural residues taking into account the food waste hierarchy (avoidance, feed humans, feed animals, bio refinery, composting/AD...)
- social innovations, which transforms resource intensive routines and practices into low resource ones, combined with socio-technically designed transition paths are key practices for the implementation and diffusion of Sustainable Consumption & Production

- transition strategies can be materialised via low resource and sustainable Product-Service-Systems referring to all products, services and infrastructures surrounding us. These can support and promote the development of more sustainable lifestyles and business models
- consumers and consumption should be considered as active part of the value chain, potentially accountable as influential structural actor
- improving the design of products can both decrease the demand for energy and raw materials and make those products more durable and easier to reuse, to repair and to recycle
- increasing recycling rates will reduce the pressure on demand for primary raw materials, help to recover valuable materials which would otherwise be wasted, and reduce energy consumption and greenhouse gas emissions
- extending minimum legal product warranties obliges manufacturers to bear full responsibility for any product failure during a legally determined period after purchase and thereby contribute to extend the life time of products
- promising technologies exists and many more are emerging that can capture and metabolize carbon as an industrial by-product: advances in this area would overturn the concept of CO₂ as a pollutant, instead exploring how it could become a valuable economic asset for other businesses, serving as a feedstock for polymers and other materials currently dependent on oil⁵
- the bio economy offers huge opportunities for, among other things, the further development of a circular economy, the optimal use of raw materials and economic growth

Therefore ACR+ calls to:

- better acknowledge the potential of local and regional authorities to reduce GHG emissions by providing direct support to LRAs circular economy plans and initiatives
- set enabling conditions for a transition to a circular economy by applying the best possible regulatory approaches (performance standards for products, phase out of landfill and incineration, targets for food waste prevention, reuse and recycling) and economic incentives that will catalyse and scale-up the implementation of climate actions
- allow for rapid adoption and roll out of promising concrete results achieved in the Horizon 2020 Research&Innovation programme on "Climate action, environment, resource efficiency and raw materials"
- set an '(absolute) decoupling material flows against economic growth' target by 2030 and incentivise material efficiency through a variety of measures: use materials more efficiently, enhance the use of secondary materials, and double the product-life of consumer goods, including the offering of high quality repair services
- increase taxes on the consumption of non-renewable resources in the form of materials and fossil fuels and rethink the VAT system (Goods produced by secondary materials – where VAT has already been paid once – should be exempted from VAT, or at least paying for a significantly reduced VAT). Such a tax reform would accelerate the transition to a circular economy, which is low carbon and resource efficient in nature

⁵ Towards the Circular Economy: Accelerating the scale-up across global supply chains, World Economic Forum, January 2014

- support a strict implementation of the waste hierarchy with specific targets for the first levels (specific targets for waste prevention and preparing for reuse, high recycling target, specific targets for biowaste management); energy recovery only for waste that cannot be recycled and safe landfilling only for waste that cannot be recycled or recovered; phasing out direct landfilling

Applying circular economy principles would, besides climate change gains, provide:

1. **economic savings:** reduce costs related to extracting and transporting virgin resources and thus future climate change mitigation costs
2. **job creation:** between 180.000 and 400.000 jobs by 2030⁶ could be created if full implementation of EU waste legislation and CE principles are applied
3. **energy savings:** less energy required for extraction of virgin materials and production. Remanufacturing typically uses 85% less energy than manufacturing does⁷
4. **resource savings:** UK analysis suggests that remanufacturing would save at least 70% of materials as compared to manufacturing new products⁸

⁶ Commission Staff Working Document (SWD/2014/0207 final), Impact Assessment accompanying the document Proposal for reviewing the EU waste management targets

⁷ KTN, Supporting Excellence in UK Remanufacturing, 2014

⁸ Next Manufacturing Revolution, the Next Manufacturing Revolution: Non-labour Resource productivity and its potential for UK manufacturing, 2013