

# **Your Voice In Europe: ROADMAP feedback for Communication: Strategy on Plastic in a Circular Economy (including action on marine litter)**

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## **Related document: Communication: Strategy on Plastic in a Circular Economy (including action on marine litter)**

### **Feedback:**

*The roadmap accurately defines the issues around creating a circular economy around plastics. Plastic will remain a driver in our economy for many good reasons. Let me be clear, if a waste material can be recycled in its original form it should be recycled that way, but many waste streams contains mixed plastics of many various qualities, compositions and they are seldom clean. It will be very hard to find economical ways to recycle those streams into valuable products, meaning they end up in either landfill, incineration or littering.*

*Technologies for material recycling of mixed plastics are available today and they are not dependent on well sorted materials or absolutely clean material fractions. Cassandra works with a thermo mechanical de-polymerization of hydrocarbon rich waste streams, being for example tires or mixed plastics. It can be compared to pyrolysis where material is heated under absence of oxygen and then polymers decompose to their original building blocks, oil and gas. These technologies do not produce any emission themselves to the Environment, what goes in comes out in the product streams, they are also energy efficient up to 90%.*

*We avoid processing PVC because of Chlorine content and PET which has a better recycling option available, at least in Sweden, they should go other ways. Other unwanted chemicals in plastics which we don't want to have recycled into our environment can be extracted from the products at a later stage.*

*The oil recycled from mixed plastics is similar to a natural light crude oil and can be used for all the applications that crude oil is used for: chemicals, lubricants, special oils, fuels, bitumen etc.*

*The gas is primarily consisting of propane and butane and is a very good feedstock for chemical processes like plastic production but can of course also replace gas generated from fossil sources.*

*Put simply, 1 kilo of plastic will give appr 0,8 kg of oil, 0,1 kg of gas and 0,1 kg of carbon black/ash. It will thereby replace the same amount of new virgin fossil oil extraction needed to produce the same.*

*Thermal de-composition (pyrolysis) is today compared/defined as energy recovery, nothing could be more wrong since this is material recycling creating the building blocks of plastics and many other important basic materials the society needs and will need.*

*We noticed with pleasure that Waste generated Fuels might become a part of future quotas on fuels in increasing recycled share of fuels, exact the right way to go forward since it replaces dependency on further extraction of fossil oil.*

*By comparing thermal de-composition (pyrolysis) with energy recovery we stimulate incineration of huge amounts of plastics resulting in a very short life cycle before plastics have a very negative impact on GHG emission. Burning plastics also results in fast extraction of new fossil oil, incineration is not a sustainable way forward.*

*Even if material recycling of plastics back to the same plastic quality will be increased, which it should, there will always be large amounts of true "end of life" plastics where no other option remains than landfilling or incineration. Thermal de-composition (pyrolysis) plays a vital role in treating these waste streams and return them into useful products that can lower dependency on virgin fossil sources.*

*If feedstock's for plastic production becomes more based on bio sources, the plastic still faces material recycling needs and if not economically viable the same options are available as for fossil based plastics, they will be landfilled, incinerated or littered. Again there is a need for other treatment possibilities like pyrolysis. Bio-degradable plastics seems to stimulate landfilling with all the consequences of making that sustainable, as mentioned it might impact society to more of a throw away economy.*

*Reducing by design, standardizing, prohibiting unwanted substances are all very important initiatives to secure better recyclability of plastics but the amount of "end of life" with no clear recycling route will probably grow in the future.*

*So to summarize according to the points made in the roadmap:*

*1) High dependency on fossil feedstock*

*Can be broken by defining de-polymerization technologies of plastics as material recycling and bring these products in to a circular flow to create new plastics among other applications. Enormous saving on GHG footprint since recycled hydrocarbons replace fossil source.*

*Innovative de-polymerization technologies exists, define them as material recovery and nothing else*

*Incentives must be in place to stimulate innovative technologies and favor these financially over virgin feedstock's*

*2) Low rate of recycling*

*Open the market by defining de-polymerization as material recycling, the products coming out of such processes should be considered as recycled in all legislations*

*within EU, so no penalties for GHG gases since the technology actually avoids further increase of GHG gases by replacing fossil sources*

### *3) Plastics in the environment*

*Collection and sorting systems must be more robust, just adding higher landfill taxes or bans to landfill as incentives will probably encourage society to take shortcuts to avoid taxation or bans, EU will probably start to export more with very limited control on process. We might end up in gigantic investments in incineration across EU, not good for Circular Economy and GHG emissions.*

*The value of waste plastics must be appreciated and by securing different ways to recycle plastics ranging from incineration (true non-recyclable products or unwanted substances) to various material recycling options including de-polymerization technologies.*

*In conjunction EU needs to create legislation and incentives that secures the market for all recycled materials, if this market is freely competing with virgin materials I think all of us knows what might happen.*

*Yours Sincerely  
Jan Jakobsson*

**Feedback file:**