

# Sustainability Summit 2018

## Climate Change and Waste Management

 **ZERO  
WASTE ALLIANCE  
IRELAND**



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# Sustainability Summit 2017

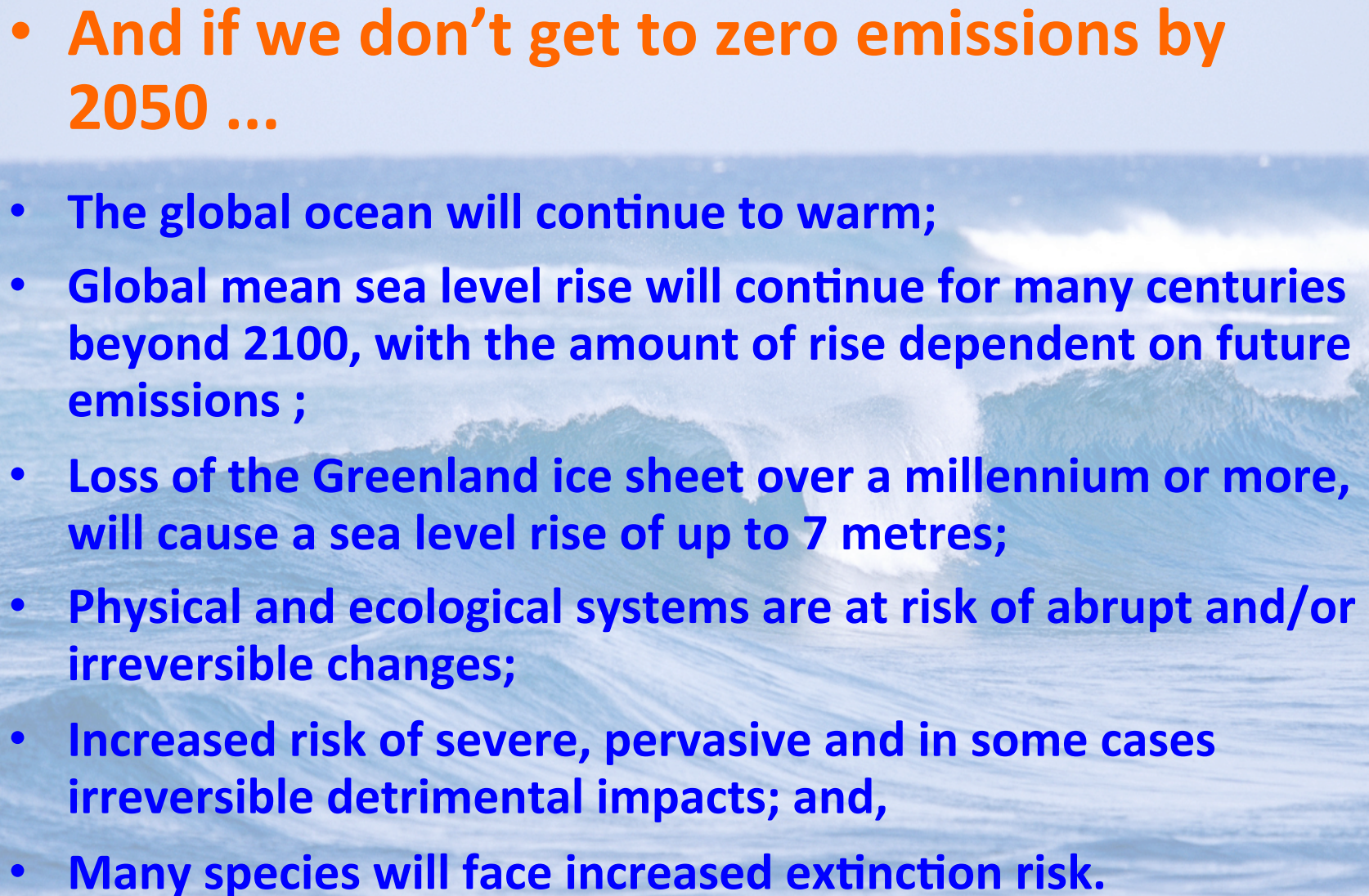
- **Climate Change ... Key Issues:**
- **Human activities are definitely the main cause of current global warming;**
- **17 of the 18 warmest years on record have been in this 21st century;**
- **Each of the last three decades has been successively warmer than any preceding decade since 1850;**
- **The period from 1983 to 2012 was the warmest 30-year period of the last 800 years in the Northern Hemisphere, and likely to be the warmest 30-year period of the last 1400 years ...**

- **Climate Change ... Key Issues, contd.**
- Atmospheric concentrations of GHGs are at levels that are unprecedented in at least 800,000 years;
- Concentrations of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) have all shown large increases since 1750 (40%, 150% and 20%, respectively);
- Multiple evidence indicates a strong, consistent, almost linear relationship between **cumulative** CO<sub>2</sub> emissions and projected global temperature change to the year 2100 and beyond;
- To have a good chance of keeping global warming under 2C, there is only a finite amount of greenhouses gases we can emit – this amount can be thought of as a fixed budget amount, or **quota**.

- **Cumulative Emissions, Budget and Quota.**
- Let's consider how much greenhouse gases have been emitted, and how much more can we “safely” emit:
- The total carbon budget which the atmosphere can hold is some **2,900 GtCO<sub>2</sub>-e**. This is the cumulative amount of emissions if we are to limit total human-induced warming to less than 2 degrees C relative to the period 1861–1880 with a probability of >66%.
- That's our **quota !**
- But how much of that have we used ?
- And how much is left for us to use up ?

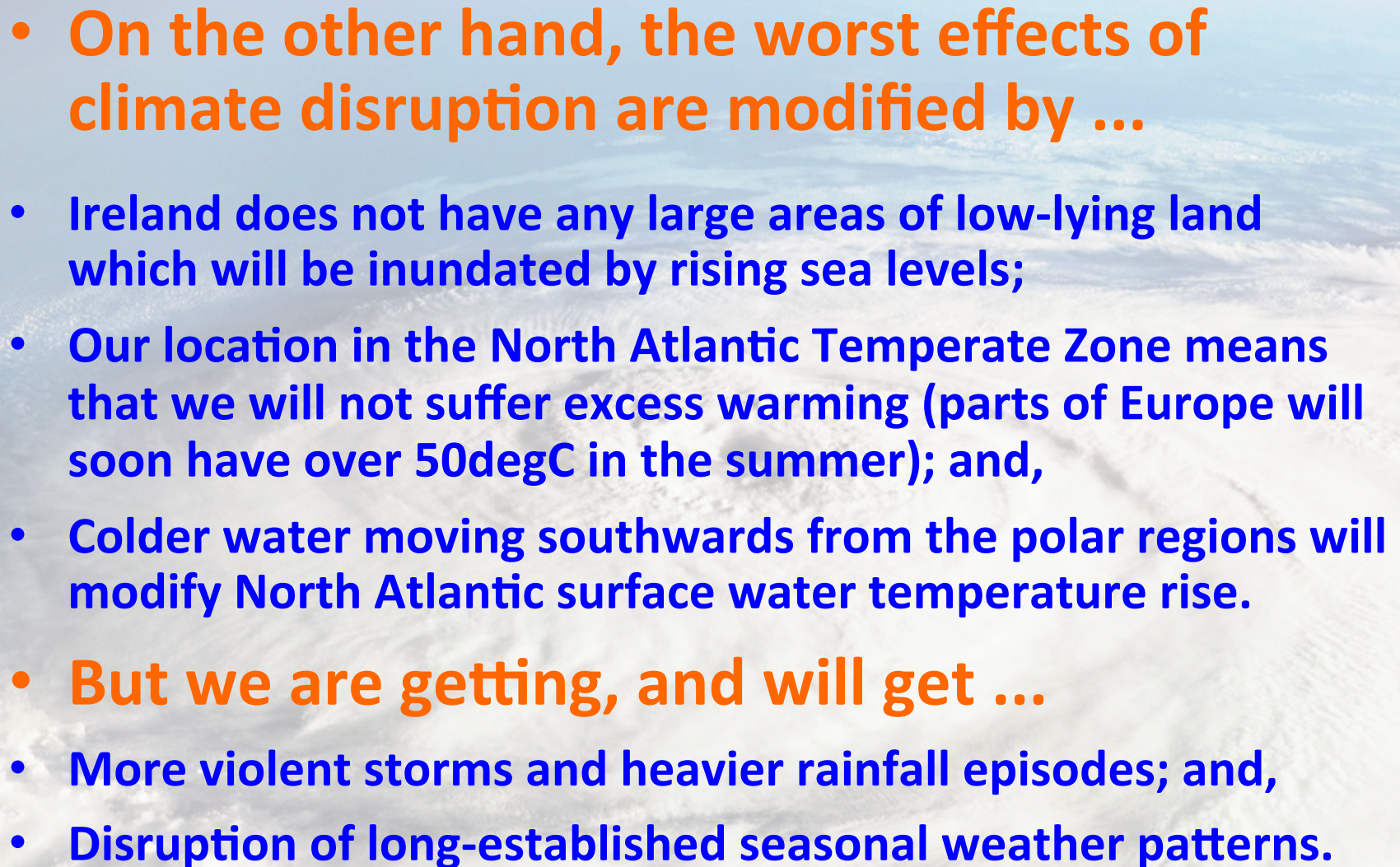
- **Cumulative Emissions, Budget and Quotas.**
- Since 1870, human activities have emitted some **2,145.5 GtCO<sub>2</sub>-e**
- The carbon budget remaining is only **754.5 GtCO<sub>2</sub>-e**, if we want to limit human-induced warming to less than 2 degrees C.
- We have used **74%** of the quota, leaving only **26%**.
- At the current rate of emissions, that 26% will give us a little bit less than **19 years**, i.e., until 2037.
- To stabilise warming, **CO<sub>2</sub> and other GHG emissions will have to be reduced to zero**, and the faster this zero point is achieved, the lower the level at which global warming will stabilise.

- **Getting to Zero ...**
- Fossil-fuel-related CO<sub>2</sub> emissions reached **32 GtCO<sub>2</sub>-e/yr**, in 2010 and are increasing year-on-year;
- Carbon emitted from soil is speeding up global warming;
- **55Gt CO<sub>2</sub>-e** will be emitted from soil into the atmosphere by 2050;
- **Permafrost** holds huge amounts of methane (CH<sub>4</sub>), a reduction in permafrost is virtually certain with continued rise in global temperatures, and current permafrost areas will become a net emitter of carbon (CO<sub>2</sub> and CH<sub>4</sub>) with a loss of **180 to 920 GtCO<sub>2</sub>-e** during this century .

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- **And if we don't get to zero emissions by 2050 ...**
  - **The global ocean will continue to warm;**
  - **Global mean sea level rise will continue for many centuries beyond 2100, with the amount of rise dependent on future emissions ;**
  - **Loss of the Greenland ice sheet over a millennium or more, will cause a sea level rise of up to 7 metres;**
  - **Physical and ecological systems are at risk of abrupt and/or irreversible changes;**
  - **Increased risk of severe, pervasive and in some cases irreversible detrimental impacts; and,**
  - **Many species will face increased extinction risk.**

- **And how is Ireland doing ...**
- Ireland will miss its agreed emissions reduction target for 2020 by a substantial margin (*Climate Change Advisory Council, November 2017*);
- Without major new policies and measures, Ireland will also miss both its proposed 2030 EU target and its objective of reducing emissions of carbon dioxide by at least 80% (relative to 1990 levels) by 2050 by a very large margin (*ibid*);
- Our agriculture – based largely on ruminant animals (dairy and beef) faces very significant problems;
- Public transport outside of major cities is poor; Ireland has a very high level of car dependency, all our goods are carried by road, and emissions from transportation will be hard to reduce;
- Our renewable energy policy is skewed towards large-scale wind power, with very little solar; and,
- There is a low (though increasing) level of climate change awareness.

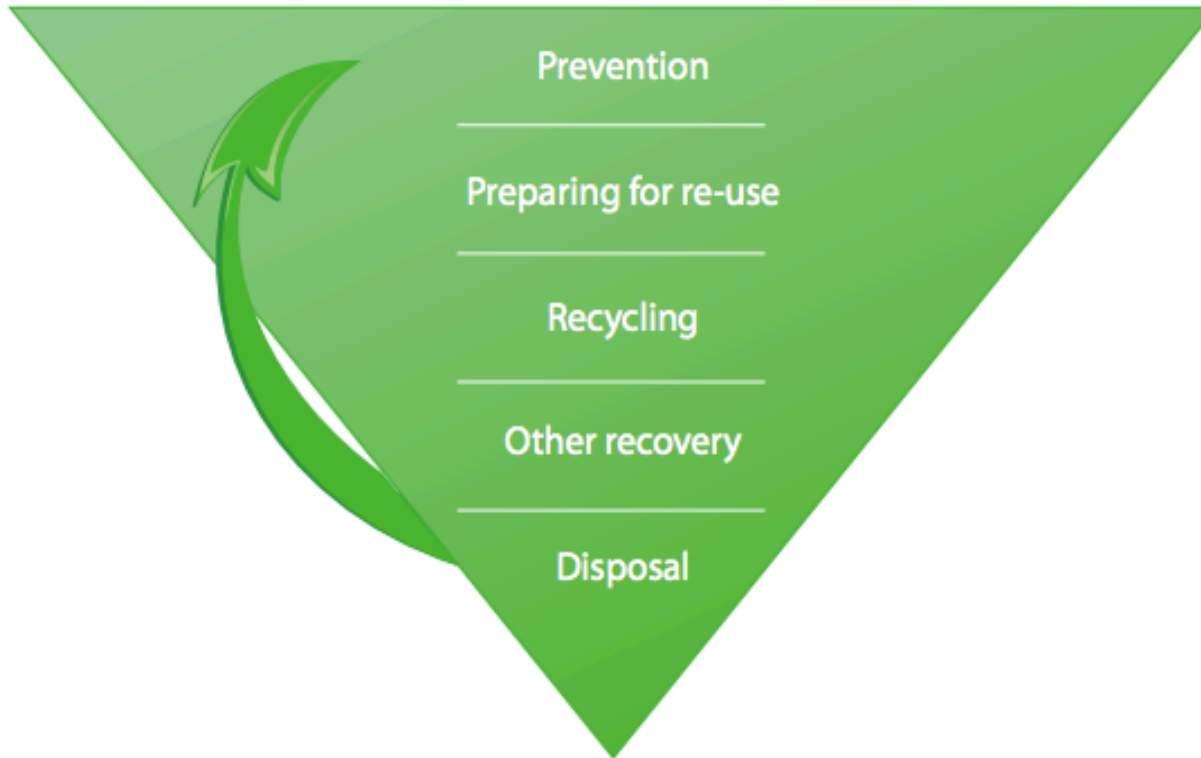


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- **On the other hand, the worst effects of climate disruption are modified by ...**
  - Ireland does not have any large areas of low-lying land which will be inundated by rising sea levels;
  - Our location in the North Atlantic Temperate Zone means that we will not suffer excess warming (parts of Europe will soon have over 50degC in the summer); and,
  - Colder water moving southwards from the polar regions will modify North Atlantic surface water temperature rise.
  - **But we are getting, and will get ...**
  - More violent storms and heavier rainfall episodes; and,
  - Disruption of long-established seasonal weather patterns.

- **Climate Change and Waste**
- **Waste accounts for only 1.6% of Ireland's greenhouse gas emissions, but the full impacts have not been included in Ireland's greenhouse gas emission inventory;**
- **If we avoided waste, we could reduce GHG emissions by a more significant amount;**
- **No more than 1.0 % of the products we purchase are 'durable' enough to be in use more than six months later. This wasteful consumption of materials wreaks havoc on our land and water resources, on our atmosphere, and contributes to climate change;**
- **So we need to consider the 6Rs ...**

- **Climate Change and Waste ...**

**Moving up the waste hierarchy**



**The standard EU Waste Hierarchy**

- **Climate Change and Waste ...**

## **The 6 R's of Green Living**



Refuse  
Reduce  
Reuse  
Repair  
**Recycle**  
Re-Think

[GreenSalem.com](http://GreenSalem.com)

- **Climate Change and Waste ...**



**Let's call it the 7Rs**

**Now we would be approaching sustainability !**

**Is there a landfill in sight? No!**

**And no mass burning of stuff !**

- **Climate Change and Waste ...**



**We must not sweep the waste problem under the carpet !**

- **Zero Waste Alliance Ireland has some helpful and positive policies to offer ...**
- **Eliminate the production of materials and goods which cannot be re-used, recycled or naturally biodegraded;**
- **Eliminate incineration -- recycling plastic saves 3.7 to 5.2 times more energy, recycling paper saves 2.7 to 4.3 times more energy, and recycling metal saves at least 30 times more energy than can be recovered through incineration;**
- **Waste is made by mixing a variety of discarded materials; therefore segregation at source is an essential pre-requisite to sustainable and climate friendly waste management;**

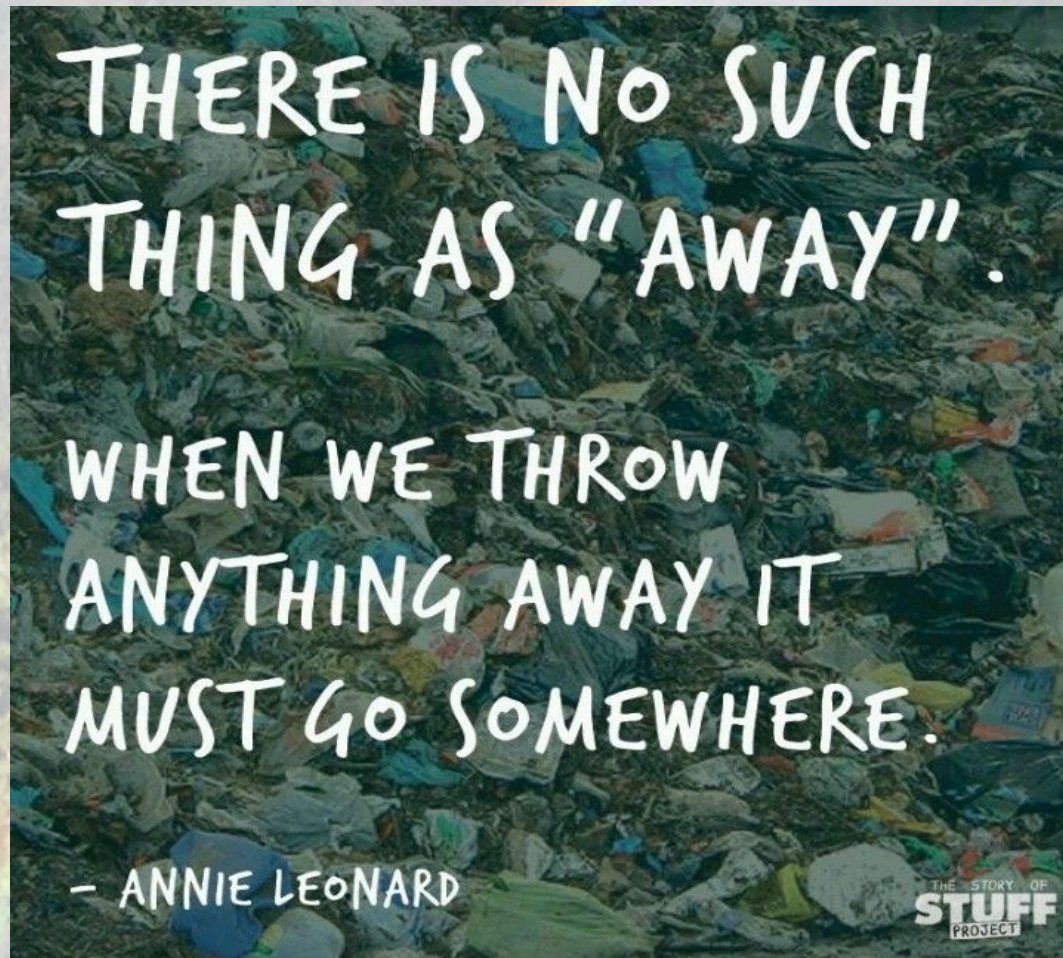
- **Zero Waste Alliance Ireland has some helpful and positive policies to offer ...**
- **Eliminate the export of discarded materials, except those that require very specialised treatment;**
- **It is essential that discarded stuff is considered as a community resource, and not as a bulk commodity;**
- **Communities cannot resolve the waste problem alone and should not be forced to clean up after irresponsible industries;**
- **Communities faced with discarded materials and objects that they cannot exchange, repair, re-use, recycle or compost must demand that industry stops producing them;**



- **Zero Waste Alliance Ireland has some helpful and positive policies to offer ...**
- **Dealing with the wastes we produce does not require high-technology solutions;**
- **We need to re-think, and to consider that our discarded stuff is a productive resource, capable of generating new opportunities for local economic development;**
- **It is wrong that society has to pay for the disposal of discarded materials by landfilling, incineration or export, when these unwanted materials and goods could be creating income and wealth through repairing, re-using, recycling, re-manufacturing, resulting in job creation, and saving on imports.**

- **Zero Waste Alliance Ireland has some helpful and positive policies to offer ...**
- **Industry must fully adopt the principle of extended producer responsibility -- all products must be easily repaired, re-used and (at end-of-life) be taken apart and the components recycled;**
- **Ireland MUST fully implement the EU Packaging Waste Directive, requiring all firms which place packaged goods on the Irish market to take back the packaging on request; and,**
- **Repairing, re-use, recycling and composting must be incentivised financially and through direct assistance.**

- Climate change has emphasised to us that we live on a finite planet ...



# Discarded Materials and Climate Change

There are some positive signs:

- The European Commission is becoming more critical of incineration; landfills are being phased out;
- A levy may be placed on one-trip disposable cups in Ireland;
- The Community Reuse Network Ireland is doing excellent work;
- “Repair cafes” and recycling activities are on the increase.

## But on the other hand ...

- These activities are relatively small in size, and are few;
- We have no paper or cardboard recycling in Ireland; and,
- All our end-of-life tyres are burned or exported.

# Sustainability Summit 2018

## Climate Disruption:

- A major threat, proceeding faster than anticipated, and in danger of becoming irreversible, with very damaging consequences.

## Waste of discarded materials and goods:

- Not the most serious contributor to climate change, but must be addressed at all levels;
- Re-design, avoid unnecessary disposable stuff, implement Zero Waste and the Circular Economy;
- Every climate change mitigation effort counts.

**Zero Waste and the Circular Economy are complementary therapies for a planet which is being increasingly damaged by unsustainable exploitation of the Earth's finite resources and by rapid disruption of the climate regulation system.**

Thank you for listening; if you would like to discuss further, you will find me on the Zero Waste Alliance Ireland (ZWA) stand.

Jack O'Sullivan

**Zero Waste Alliance Ireland** and **Environmental Management Services**

29-01-18



the national  
**SUSTAINABILITY  
SUMMIT 2018**  
Securing Ireland's Future

**Meet us there**

Stand  
A27

**Dublin**  
CITYWEST HOTEL January 31st 2018