8 May 2019

GR

ICAO SEMINAR ON

AIRPORTS

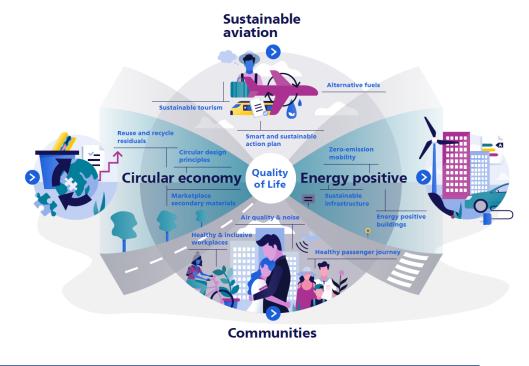
Denise Pronk Senior advisor Group Strategy and Development Programme manager sustainability



Amsterdam Airport Schiphol

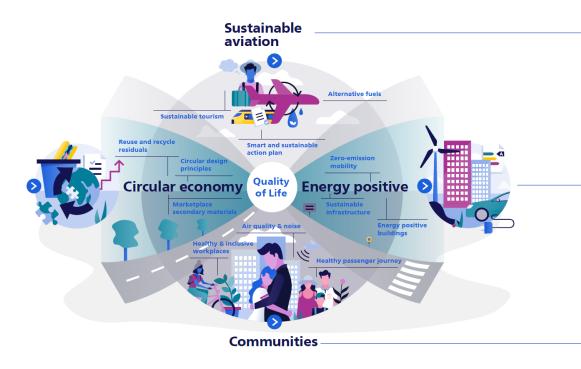


Sustainability at Schiphol Group (1/2)





Sustainability at Schiphol Group (2/2)



Goal: emissions int. aviation in 2030 back on 2005 level

 Joint action agenda "Smart and Sustainable" to reduce aviation emissions

Goal: zero emission airport 2030

 Reduction of natural gas, increase in zero emissions vehicles, generation renewable electricity

Goal: improving quality of life together with surrounding communities

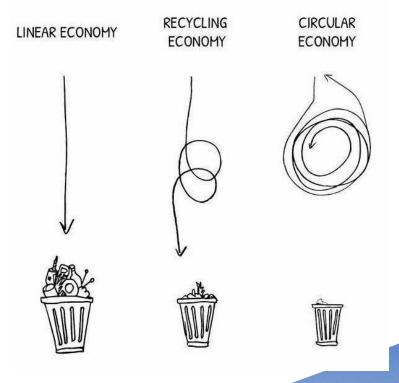
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Lower noise hindrance and improve air quality

Circular economy – what is it?

A circular economy is restorative and regenerative by design, and aims to keep products, components, and materials at their highest utility and value at all times.

- Ellen MacArthur Foundation



Circular economy – why is it important?

- Growing world population and rising prosperity levels
- Earth overshoot day: we use more from nature than our planet can renew in the whole year.
- Use of primary natural resources
- Embodied carbon in infrastructure
- Food wastage
- Electronic residuals

How many Earths do we need

if the world's population lived like...



Source: Global Footprint Network National Footprint Accounts 2018

Circular economy in practice (1/2)

Circular		Strategies						
economy Increasing circularity	Smarter product use and manu- facture	R0 Refuse	Make product redundant by abandoning its function or by offering the same function with a radically different product					
		R1 Rethink	Make product use more intensive (e.g. by sharing product)					
		R2 Reduce	Increase efficiency in product manufacture or use by consu- ming fewer natural resources and materials					
	Extend lifespan of product and its parts	R3 Reuse	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function					
		R4 Repair	Repair and maintenance of defective product so it can be used with its original function					
		R5 Refurbish	Restore an old product and bring it up to date					
		R6 Remanufacture	Use parts of discarded product in a new product with the same function					
		R7 Repurpose	Use discarded product or its parts in a new product with a different function					
	Useful application of mate- rials	R8 Recycle	Process materials to obtain the same (high grade) or lower (low grade) quality					
		R9 Recover	Incineration of material with energy recovery					

economy

Circular economy in practice (2/2)

	Levels of circularity	(10 R's)					
High	Refuse			Docian			
riigii	Reduce		•	Design Materials			
	Redesign	~	•	Safeguarding	y value		
	Re-use						
	Repair		X	Stuff Space Plan	1 day - 1 month 3 - 30 years		
	Refurbish		A	Services	7 - 15 years		
	Remanufacture			Skin	20 years		
	Re-purpose			Structure	30 - 300 years		
	Recycle			Site	Eternal		
Low	Recover (energy)	Stewart Brand's 6 S's from H	low Build	ings Learn			

Circular economy at Schiphol Group

- 2050: circular economy at our airports
- 2030: zero waste airports



Current performance related to zero waste 2030 goal



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Schiphol Circular 100% 8% Help us to recycle Estimate according to Metabolic research 2050 Value reuse operational residuals 90% 100% % processed at an high tread on the 'Ladder van Lansink' 2030 Waste separation operational flow 100% 46% % of non-hazardous operational flows **Circularity building index** 80% 22% 2030 Estimate according to Alba research Material passports Number of new buildings with a material passport 2030

Thank you for your

attention

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