Managing Infrastructure Carbon in The Environment Agency

Neil Guthrie

Environment Agency

Net Zero Carbon by 2030

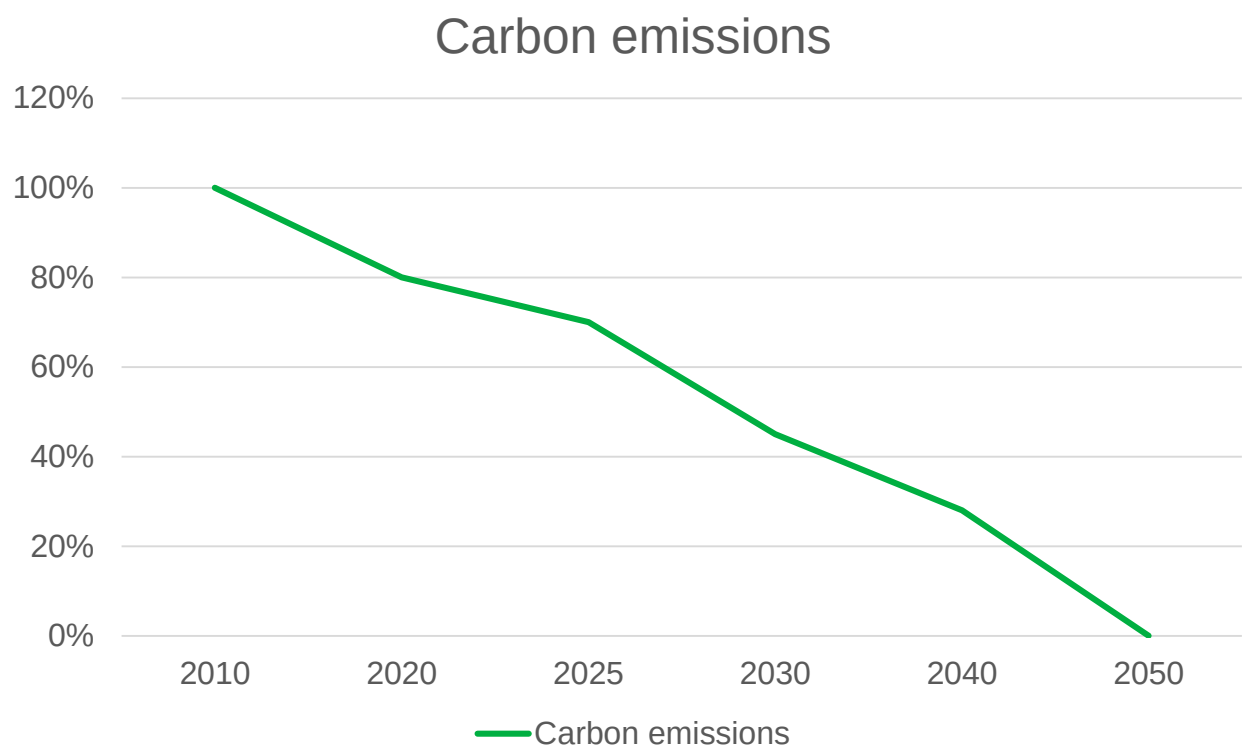
- Announced 10th October 2019
- Two stages
  1. Reduce our carbon emissions in line with Paris Agreement – 1.5 degree warming pathway
  2. Balance remaining emissions through investing in carbon absorption projects
- Absolute Zero by 2050?

Environment Agency

Net Zero by 2030 – Scope

45% reduction by 2030

- ✓ Operation of assets
- ✓ Buildings
- ✓ Travel
- ✓ Fuel
- ✓ **Supply Chain**
- ✓ **Commuting**
- × Pension fund
- × Avoided carbon emissions



For illustration only

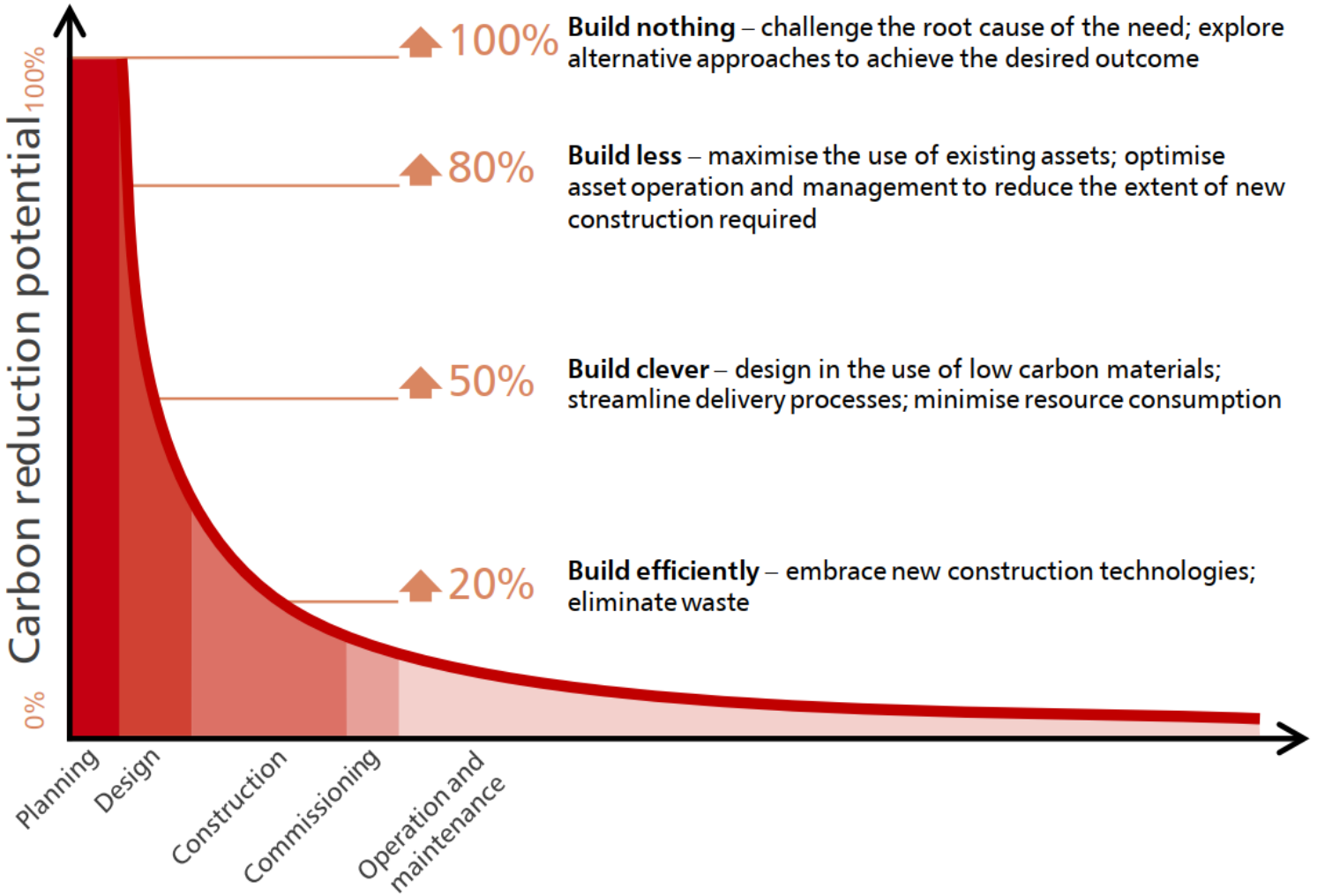
Environment Agency

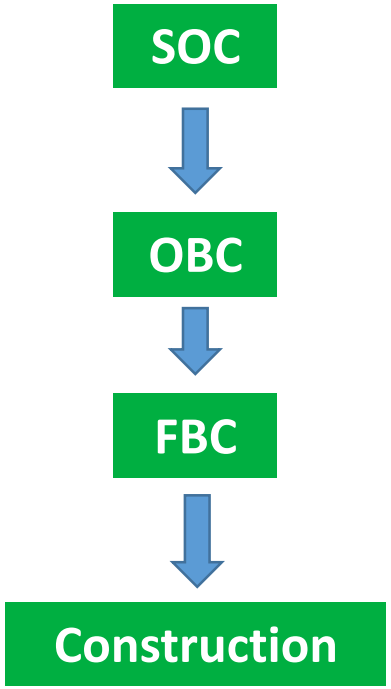
Infrastructure

- Based on the PAS 2080 Carbon Management in Infrastructure principles
- Assess whole life carbon for all construction work
- Scope 1,2 &3 emissions
- Whole life carbon is part of the Business case decision making process

Environment Agency

The Carbon Reduction Hierarchy





Environment Agency

Carbon Assessment Tools

- ERIC
  - Existing Tool
  - Developed by the EA
  - Available freely
  - Carbon Only
  - Used for optioneering and actual carbon
- Cost and Carbon Tool (CCT)
  - Will replace ERIC
  - Combined cost and carbon
  - Will be sued for estimating cost and carbon

Environment Agency

What is Eric?

- ERIC is the EA Tool used for Carbon Assessment and Reporting
- Estimates carbon over the whole life of constructed assets
- Informs decision-making and enables solution optioneering on a carbon basis
- Captures data and monitors progress against carbon targets
- ERIC tool comes in two parts
  - Carbon Modelling Tool – Used at the pipeline and optioneering stage (SOC)
  - Carbon Calculator – Used for all other Business Cases and to calculate final outcome

Environment Agency

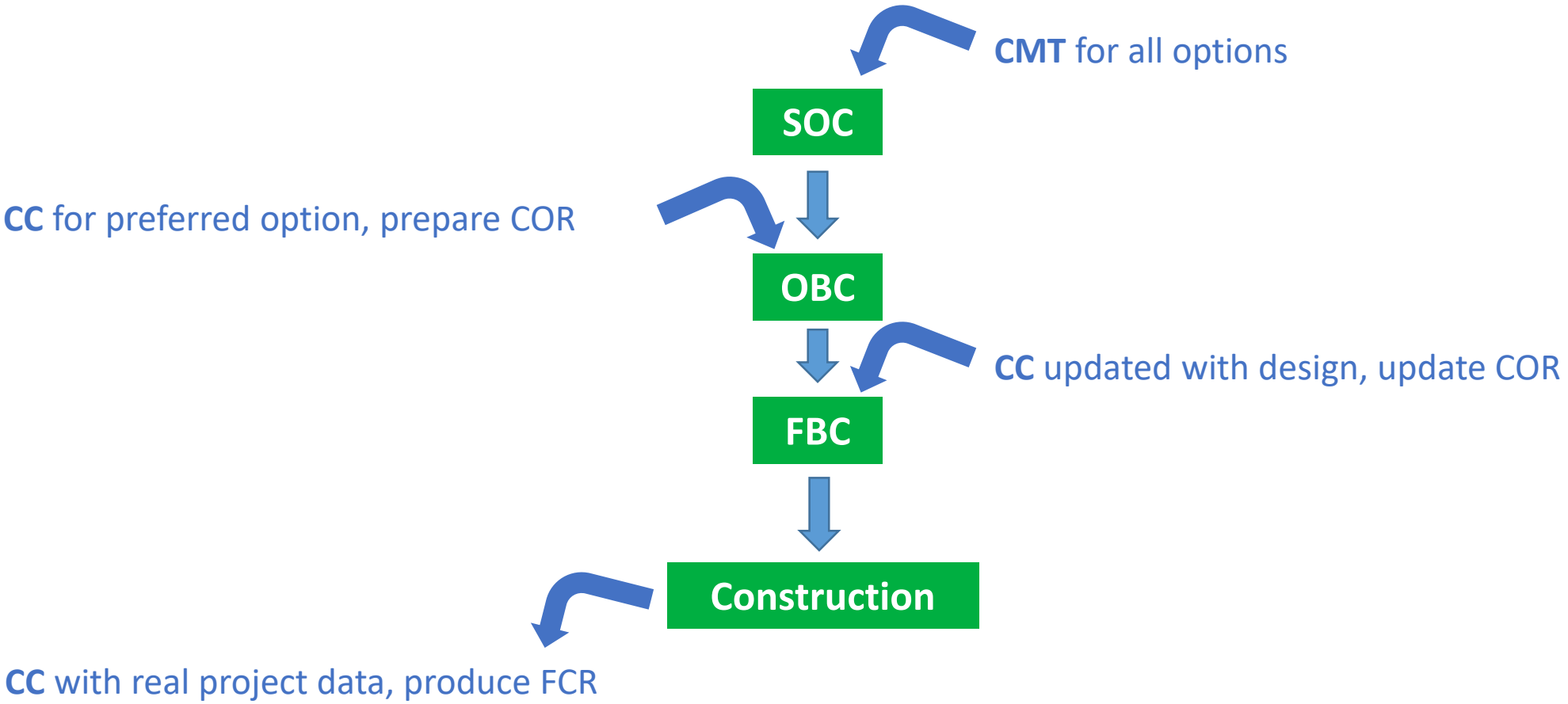
ERIC Tools

Carbon Modelling Tool (CMT)	Carbon Calculator (CC)
‘Top-down’ assessment – carbon per asset	Detailed ‘bottom-up’ assessment
Uses data from previous similar projects	Uses project data
Used in appraisal to quickly compare options and select solutions	Used after selection of a preferred option and built up during delivery phase
Generates the project’s baseline	Reported via Carbon Optimisation Reports (CORs) and % change vs baseline
	Now has Natural Flood Management tab

An e-learning module on use of these tools, and a handbook, is available.

Environment Agency

The Process



CMT = Carbon Modelling Tool CC = Carbon Calculator COR = Carbon Optimisation Report FCR = Final carbon Report

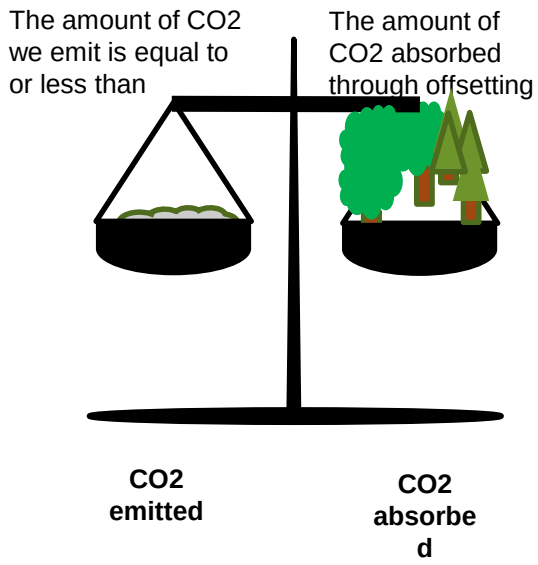
Environment Agency

Cost and Carbon Tool

- Provide an integrated cost and carbon estimate
- Will be linked to Asset Management Systems
- Will be available from early 2021
- Will replace ERIC
- CCT will be accessible by the CCE only

Environment Agency

Net Zero is achieve when...



Step 1. Reduce our CO2 emissions

For example:

- **Asset management:**
  - Construction
  - Pumping
  - Maintenance
- Our estate
- Buildings
- Supply chain
- Travel & commuting
- Fleet
- IT etc…

Step 2. Offset remaining CO2 emissions

For example:

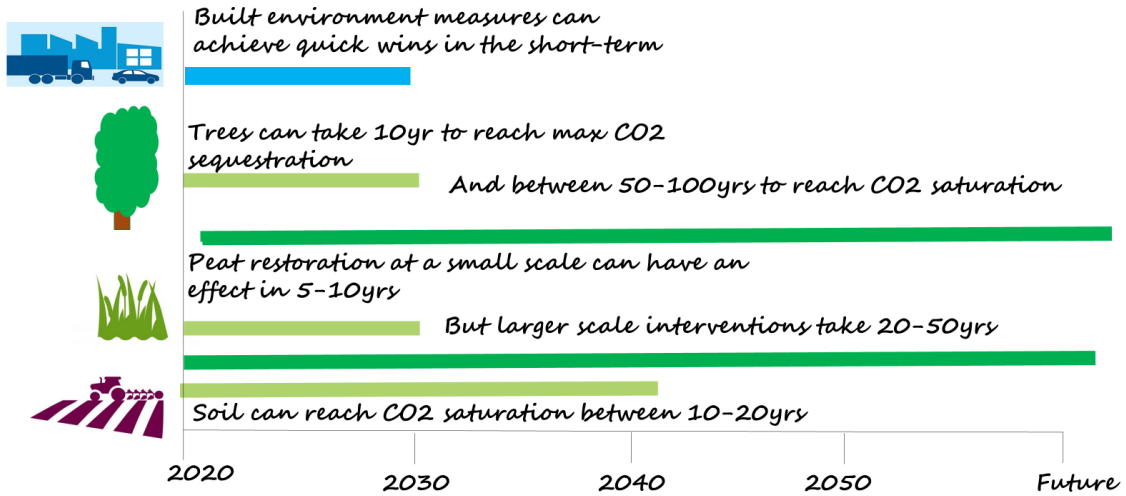
- On our own estate
- On our own projects/schemes
- In partnership with other
- Through our supply chain
- Through UK & international offsetting market

Offsetting <u>does not</u> include:

- Our own carbon reduction measures or
- Theoretical avoided CO2 emissions

Offsetting is exciting, but it's complicated. For example …

- Different habitats absorb CO2 in different timescales
- Different habitats reach a CO2 saturation point at different time scales
- Habitats can leak CO2 one saturated, if they are damaged or their management changes



This means we will need to invest our money in long-term solutions like habitat creation

And quick win solutions which help offset our emissions now e.g. built environment measures (outside our estate) which include:

- Low carbon heating
- Insulation
- Timber buildings

Aims of the project

We will: Collate and analyse existing evidence to help us understand how we could sequester or absorb an equivalent amount of carbon in the natural environment to balance our residual carbon emissions.

It will help us understand:

- **Which** carbon balancing approaches will be most effective?
- **What** offsetting options are available to us & how suitable are they?
- **Where** (geographically) should we work?
- **Who** should we collaborate with?

This project is being delivered for the whole of the Environment Agency