Since November 2013 the Infrastructure Carbon Review has been endorsed by a range of organisations responsible for delivering many of the UK’s largest infrastructure capital projects, including government, clients, major contractors, consultants and professional services firms.

Many had already embarked on the low carbon journey. In the last year, all have taken steps to further reduce emissions, for the simple reason that evidence shows cutting carbon is good for business.

Some industry leaders have reported reductions in capital carbon emissions of up to 40% since 2010.

The UK has a legally-binding commitment to achieve an 80% reduction in its carbon emissions by 2050. The Construction Leadership Council has a clear ambition to achieve a 50% reduction in greenhouse gas emissions in the built environment by 2025. The Green Construction Board is taking this forward.

If emerging best practice is driven across the infrastructure sector over the coming years, an annual saving of 24 million tonnes of carbon dioxide is more likely to incur higher running costs. Engaging with the carbon reduction agenda will force changes in your organisation and supply chain and contribute 85% of whole-life emissions.

Chasing down the efficiencies that will bring those savings within reach is worth the effort. Infrastructure that is locked into old technologies is more likely to incur higher running costs. Engaging with the carbon reduction challenges from its outset. Delivery partners are encouraged to achieve continuous improvement through financial incentives linked to carbon targets.

Each of the ICR signatories is tackling carbon reduction in a way that works best for them. Here’s a snapshot of what’s being done.

1 INCENTIVISING SAVINGS

Crossrail has targeted carbon reduction from the outset. Delivery partners are scoring in four categories from non-compliant to world-class, with performance reported to the CEO and finance director and made visible across the supply chain. Crossrail directors and partners are encouraged to achieve continuous improvement through financial incentives linked to carbon targets.

Next two years: Increased focus on monitoring operational carbon which contributes 85% of whole-life emissions.

Gains so far:
- 40% reduction in capital carbon against a 2010 baseline.
- Delivering agreed new carbon targets for 2020, including a 60% reduction in capital carbon from a 2010 baseline.

2 SHINING A SEARCHLIGHT ON CARBON

Anglian Water and 4One Alliance have set challenging targets with their supply chain to deliver low carbon, low cost solutions. Rigorous project governance ensures carbon is measured and challenged against a baseline on three separate occasions before construction.

Over 1300 carbon models for water infrastructure assets have been developed and will enable developers to optimise and identify optimal low carbon designs.

Gains so far:
- 40% reduction in capital carbon against a 2010 baseline.

3 EXERTING INFLUENCE

Heathrow Airport Ltd takes a holistic view to reporting carbon, including end-user emissions from aircraft and passenger surface travel, giving a total footprint of 2.3MtCO₂e in 2013. Despite controlling only 12% of these emissions Heathrow drives reductions across the board through its supply chain. Leadership comes from the Heathrow Sustainability Partnership – 13 principal stakeholders encompassing every facet of the airport’s operations, including three tier one contractors.

Gains so far:
- Innovations delivered a 29% reduction in capital carbon on foundations for T1B, saving £9m.
- Targeting operational energy savings of 150GWh/annum by 2020 through upgrading related infrastructure and terminal buildings.

4 UNLOCKING COMMERCIAL BENEFITS

Skanska has established a ‘green fund’ to back carbon reduction innovations, and other sustainability initiatives, reducing risk for clients and helping secure capital investment to drive whole-life savings. Skanska is repaid at defined points during projects’ delivery, commissioning or operating lifecycles.

Gains so far:
- Although only one project has so far been advanced with backing from the green fund, its presence and Skanska’s willingness to endorse risk have given clients confidence to invest in innovations that they wouldn’t have considered before the fund was created.
- They wouldn’t have considered before the fund was created.
- Next two years: Skanska will grow the fund in order to facilitate increasingly ambitious carbon reduction projects.

5 INFORMING BETTER DESIGNS

Costain has launched an ‘innovation portal’ that invites and shares solutions to carbon reduction challenges from its supply chain. A tool for estimating carbon at an early stage in the project lifecycle has been developed and will enable comparison with actual as-built emissions to drive future improvements.

Find more examples of action being taken in the ‘ICR one year on’ brochure: www.greenconstructionboard.org
IMPLEMENTING CONTRACTORS

Markets as well as at home. Knowledge that they gain will make them more competitive in international saving carbon reduction strategies. The technical and commercial consultants manufacture and assembly, no-dig solutions and materials replacement.

Clients have started to demand carbon and cost reductions as they realise the potential value to be gained. Contractors are already challenging conventional construction methods, to improve efficiency and competitiveness — for example, using design for manufacture and assembly, ne-dig solutions and materials replacement.

Consultants stand to win additional work helping clients to plan cost-saving carbon reduction strategies. The technical and commercial knowledge that they gain will make them more competitive in international markets as well as at home.

Three Key Challenges

1. **Advancing Commercial Models**
Share risk and reward low carbon innovation, making carbon central in procurement.

2. **Getting Clients to Demand Carbon Reduction, Accept Innovation and Accelerate the Pace of Change**
The value chain must find ways to exert influence. Where are you?

3. **Setting Standards for Carbon Measurement**
Four fifths of ICR signatories are measuring carbon but there’s little consistency in methods or data.

The REAL question about sustainable infrastructure is: how are we going to meet users’ needs in the long-term when everything points towards a resource-constrained future?

**Peter Hansford**
Chief Construction Advisor

Who’s Signed Up?

The ICR signatories have gauged their levels of ‘carbon maturity’ using this simple matrix. Almost all have improved maturity in the last year. What are you doing?

Five Steps You Can Take

1. **Provide Strong and Effective Leadership**
Articulate carbon as an organisational value and provide a vision of how the company should address it, underpinned by clear and consistent policy.

2. **Embed Carbon in Your Organisation’s Culture**
Make it part of the DNA – by communicating to change behaviours, sharing best practice and developing new low carbon skills.

3. **Measure Performance, Set Targets and Strive to Beat Them**
Set a baseline and report on progress against it, using the insight gained to inform strategic decisions.

4. **Support Innovation**
Challenge your supply chain to reduce carbon, defining outcomes but allowing creative freedom over the process, and by enabling standards and specifications to be challenged.

5. **Bake Carbon into Procurement**
Make carbon reduction a prerequisite for winning work, integrating your supply chain, managing risk effectively and rewarding outperformance of your targets.

For those who have started the low carbon journey, leadership, procurement and innovation are proving paramount in reducing carbon and cost.

**Chris Newsome, Asset Management Director, Anglian Water and Chair of the GCB Infrastructure Working Group**