# LEVERAGING THE POWER OF THE PUBLIC PURSE: USING PUBLIC PROCUREMENT OF LOW-CARBON INNOVATION FOR SUSTAINABLE INFRASTRUCTURE

## RECOMMENDATIONS TO THE EUROPEAN COMMISSION AND EU MEMBER STATES.

## THE OPPORTUNITY

Public procurement is "not a back-office function anymore, but a crucial pillar for delivering government services, and a strategic one for tackling climate change."

This was the message from EU Commissioner for Internal Market, Industry, Entrepreneurship and SMEs Elżbieta Bieńkowska and Organisation for Economic Co-operation and Development (OECD) Secretary-General Angel Gurría at a joint high-level event on strategic public procurement in Paris on June 2, 2017.

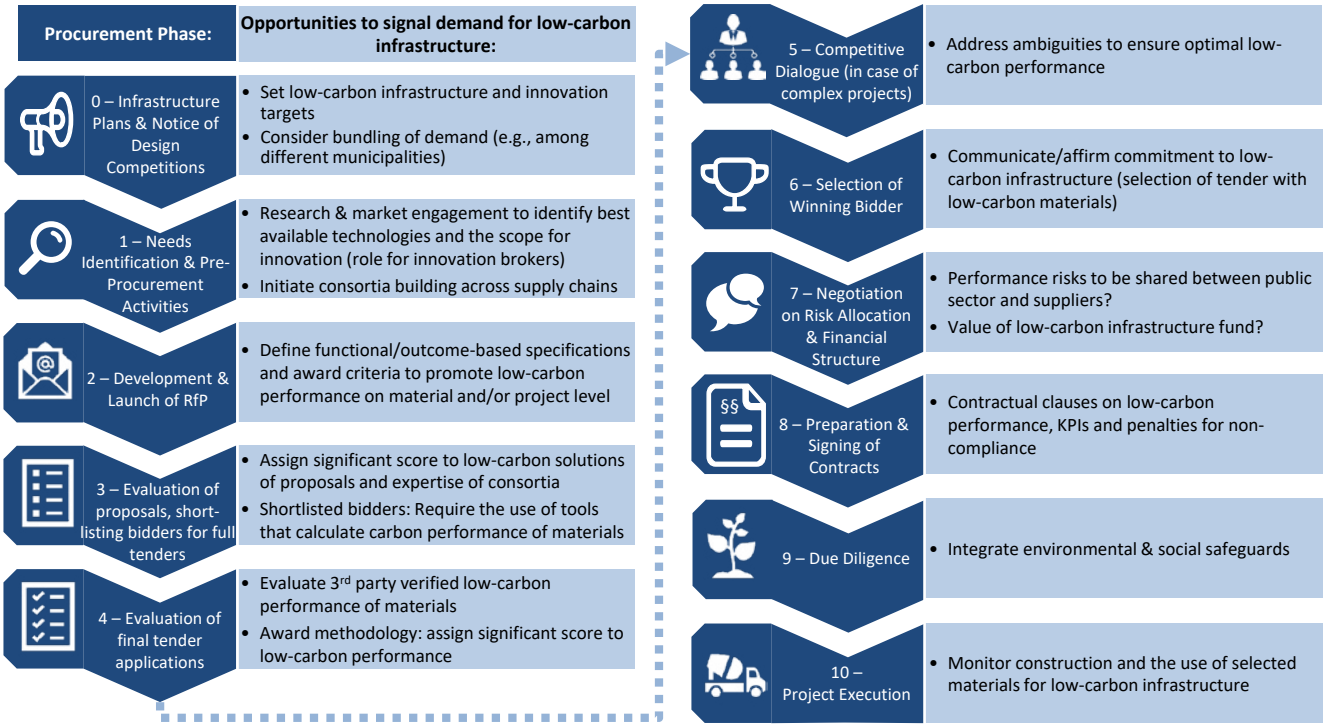
Public procurement is a powerful tool for driving markets towards more sustainable production patterns, and for creating markets for sustainable goods, services and infrastructure. Public procurement represents, on average, 12 per cent of the GDP in OECD countries (OECD, 2017). Despite the changes in recent years to international frameworks governing public procurement, the instrument is not yet being utilized to its full potential.

Good public procurement is about delivering the best value-for-money for taxpayers. All too often the meaning of value-for-money is reduced to "cheapest price". Not only is this incorrect, it is also a missed opportunity to use public money to deliver on the goals governments are pursuing on behalf of citizens: low-carbon transition, employment, sustainable development. To enable this function of public procurement, value-for-money needs to be defined as value-for-money across the lifecycle of the asset. The emphasis should be on value, not price only.

To be able to tackle pressing challenges like climate change, job creation and sustainable economic growth, support from the European Commission using public procurement as one of the pillars to meet these strategic objectives, is welcome in times where governments have to strategically rethink the way they are spending taxpayers' money. It gives policy makers and public procurement agencies a mandate to reform public procurement laws, policies and processes towards delivering value-for-money across the life cycle of the goods, services and assets they purchase.

Moving towards strategic public procurement means that public procurers introduce strategic thinking at all stages of the public procurement cycle: from needs identification, to engagement with the market, to the design of the tender specifications, to final award of contract based on value-for-money throughout the lifecycle of the asset. This is illustrated in figure 1.

# PROCUREMENT CYCLE




**A strong legal and policy framework will allow and encourage this change. More and better information, best practices on how to value sustainability, and information on how to bring that value into the procurement cycle, will also help making public procurement a strategic tool. Only then will public procurement serve as a true enabler of the much needed innovation for a transition towards a low-carbon economy.**

# THE CONSTRUCTION INDUSTRY

The construction industry is a key candidate for increasingly using strategic public procurement: infrastructure assets are the largest area of public spending and their carbon impact is significant during all the stages of the lifecycle. To date public procurement is not used to its full potential to generate sustainable value for society and incentivize the sector to invest in deep decarbonization.

**Change and stronger support is needed at an EU level and at the level of EU member states to better leverage the full potential of public procurement to drive innovation and deep decarbonization of the infrastructure and construction industry.**

Innovation within the construction value chain is crucial to facilitate deep decarbonization and to enable the deployment of low-carbon infrastructure. Reduction of carbon emissions can be achieved at different stages in the value chain of construction materials – this ranges from composition of construction materials with low-carbon impacts during raw material extraction and processing (such as low clinker cements or use of recycled materials); innovation in processing steps and manufacturing technologies (carbon capture and storage/utilization; material processing at lower temperatures); utilising renewable energy during manufacturing; low-carbon impacts of materials during subsequent manufacturing steps or during construction stage, as well as carbon absorption capabilities of materials during the use phase of infrastructure projects. Moreover, the design stage of a project can trigger low-carbon innovation with respect to the scope of suitable materials, timeline of infrastructure construction with respective impacts on material handling, access to low-carbon transport modes, opportunities to encourage recyclability of materials and eased deconstruction of infrastructure for reuse of materials in future projects, are examples among others.

**To seize that opportunity, procuring authorities and their staff should be empowered to use the intervention points along the procurement cycle as a means to better manage, reduce and share risks associated with the procurement of low-carbon infrastructure solutions.**

# EUROPEAN CONTEXT

**The EU's comprehensive legal policy framework enables and encourages the use of strategic and innovative procurement of low-carbon infrastructure.**

The 2014 revised EU public procurement directive emphasizes the strategic function of public procurement. It points to awarding contracts based on the most economically advantageous tender (MEAT) principle. MEAT means going beyond awarding based purely on lowest price, but takes into account other cost components or quality criteria (such as a product's carbon footprint). The directive outlines five different procurement procedures, each with flexibility to engage with the market at some point in the acquisition process so the authorities are better informed about the best available technologies (i.e., prior to and/ or during tendering). Finally, it promotes the use of functional specifications as a means to focus on desired outcomes instead of narrowly determining an already known technology or solution (e.g., FutureBuilt Standard for public buildings in Oslo Municipality. In this case, the carbon footprint resulting from transport, energy and materials used is required to be reduced by at least 50% compared to existing regulations and common practices). This is a very powerful lever for providing market space for innovation.

The competitive procedure with negotiation and the competitive dialogue are the procedures outlined in the public procurement directive that provide structure and certainty for the procurement of (market-ready) innovations. Beyond that, the innovation partnership procedure allows for procurement of research and development services (goods & services that are at early stages in the innovation pipeline) and the subsequent procurement of developed solutions within one procedure.

Finally, the European Commission launched a guidance package for public procurers in October 2017 that emphasizes the strategic role of public procurement and encourages member states, among others, to adopt a greater uptake of innovative, green and social criteria when awarding public contracts. [2] Also this framework boosts a move towards strategic public procurement.

# WHAT IS NEEDED TO IMPLEMENT STRATEGIC PUBLIC PROCUREMENT?

There are various conditions, planning measures and tools that could serve to increasingly foster procurement of low-carbon, innovative construction materials:

**1) Encourage and scale private sector investment into low-carbon building materials through:**

a. Sector-specific low-carbon targets;
b. Supply chain collaboration and
c. Bundling of demand for low-carbon infrastructure.

Through setting priorities, maximum carbon footprints or low-carbon targets in public tenders signal prospective public demand for low-carbon solutions to the market. Policy documents, such as city development plans for different sectors (e.g., Development Plan of Dublin City Council; FutureBuilt initiative for municipal buildings in Norway), can define low-carbon development targets as well as recommend the use of low-carbon construction materials for future public construction investments.

To better build trust between the procurer and the supplier, multi-stakeholder initiatives such as the Green Deals for construction in the Netherlands, that involve multiple actors along the construction supply chain, can facilitate this. The initiative is based on continuous dialogue between public and private sector stakeholders in the chain. When this dialogue reiterates the continued focus and priority on low-carbon performance of construction projects, it generates private sector commitment to increasingly invest in low-carbon solutions.

Central purchasing or coordinated tendering among municipalities/cities for homogenous infrastructure projects creates the necessary scale for suppliers to seriously consider low-carbon solutions. This is also referred to as the "bundling of demand" to provide more certainty to the market that there is a legitimate opportunity for scaling the use of their innovative low-carbon solutions. It also helps to discover new collaborative business models as a means to standardise and achieve economies of scale for low-carbon solutions, as the Anglian Water @One Alliance case in the UK demonstrates.

**2) Engage with the market early on to identify low-carbon innovation and stimulate collaboration throughout the construction supply chain**

Procurers do not necessarily have all the available information to identify the best available technologies in the low-carbon construction field. This is why early engagement with the market is so crucial: to demand information on where the industry stands with its latest low-carbon innovations and to provide information on the needs that procurers are seeking to satisfy, is key. The needs identification stage, market research and market engagement (such as tender-specific or regular market fairs and meetings) executed by city staff (or in cooperation with consultants i.e. innovation brokers), are important pre-tender activities for procuring authorities to identify the current state-of-play on construction materials that can address their low-carbon priorities. Such activities are decisive for defining (technical) tender specification and setting realistic but ambitious priorities for infrastructure projects.

2. http://europa.eu/rapid/press-release_IP-17-3543_en.htm

As governments contract with contractors or consortia – public agencies do not purchase construction materials directly, hence material suppliers usually do not participate themselves as bidders during the tendering phase. This is why market consultations, including with material suppliers that can offer materials with lower carbon footprints are so important to take place in the pre-procurement stage. As done in the case of the City of Eindhoven, pre-tender activities such as fairs and competitions can be used to not only identify market-ready innovations, but also to facilitate consortia building as a means to generate low-carbon innovation capacities along construction supply chains and enable the integration of innovative SMEs that could otherwise not bid for large infrastructure projects. Timely publishing of a Prior Information Notice is important to inform the market about low-carbon priorities for planned infrastructure projects. This allows for sufficient lead time to invest in innovation and stimulate supply chain collaboration for the development of effective solutions.

### 3) Use tender specifications that ask for specific low-carbon materials (technical specifications) or use performance-based specifications that refer to the carbon performance of undefined building material, or infrastructure asset.

When procuring authorities have sufficient knowledge and are aware of various low-carbon building materials on the market, they may opt for technically specifying particular types of materials, based on accepted standards. These specifications can promote emission and sustainability related aspects that proposed materials need to comply with. For example, technical specifications for cement materials can be formulated as follows:

"Only the following two cement types are allowed for respective infrastructure projects because they guarantee (a) sustainability (70% less $CO_2$ emissions than Portland cement) and are (b) resistant to Alkali-Silicia Reaction:

a. CEM III with a percentage of slag higher than 50%; or
b. Portland-fly-ash cement CEM II with a percentage of fly-ash higher than 25%."

*(Source: Rijkswaterstaat, Richtlijnen Ontwerpen Kunstwerken, April 2015)*

Alternatively, if procuring authorities have certain expertise and experience in terms of environmental superiority of construction materials for certain infrastructure applications, but want to incentivize best possible performance, technical advancement and innovative solutions, outcome-based and functional specifications on a pre-defined material level can be defined. The following example from Noord Brabant illustrates the use of performance indicators as tender evaluation criteria to assess offered solutions for a concrete bicycle lane:

a. Re-use of secondary products (concrete granulate and secondary sand) in concrete material in %;
b. Calculated $CO_2$ footprint of concrete production (per $m^3$) - this includes emissions from stage of extraction and production of all materials, storage and transport to production site until the concrete mix is ready for transportation.

The performance of materials suggested by bidders on criteria a) and b) is integrated into the award methodology: A table, included in the tender, explains how much monetary value can be deducted (virtually) from the bidding price depending on the percentage of secondary materials used in the concrete mix, and based on the achieved level of $CO_2$ emissions.

*(Source: Provincie Noord Brabant, 2017)*

Thirdly, if procurers lack technical knowledge about available low-carbon construction materials or are unsure how to achieve low-carbon performance of infrastructure projects, they may choose to use performance-based and functional specifications that leave room for suppliers to present solutions meeting the criteria. The national FutureBuilt standard in Norway includes such functional specifications for public buildings as a pre-condition to qualify as a project. These specifications are used in public tenders:

"Reduction of greenhouse gas emissions from transport, energy and materials. The carbon footprint must be reduced by at least 50% compared to existing regulations and common practices. This is measured by a climate gas accounting tool for buildings."

*(Source: FutureBuilt, 2016)*

### 4) Use holistic award methodologies and tools that make low-carbon performance a competitive element of the bidding process

Procuring authorities increasingly develop and make use of methodologies and assessment tools (e.g., the Dutch environmental cost indicator tool, DuboCalc; the Norwegian carbon calculation tool Klimagassregnskap) to integrate carbon and other environmental performance indicators into the tender evaluation phase. Such tools can be applied for construction materials and/or at project level assessment. Using such tools increases transparency on low-carbon performance, decreases risks concerning the carbon impact of procured infrastructure solutions and incentivizes suppliers to compete on other dimensions than price.

### 5) Use innovation brokers to increase capacities among public and private sector actors to engage in procurement of innovation and the deployment of low-carbon infrastructure solutions

For the realization of public procurement of innovation, a third party is often involved assisting in setting up the procurement process, creating awareness and capacities of suppliers (including SMEs) to engage with public sector clients, moderating dialogues with procuring authorities internally as well as with the market, facilitating the writing of tender documents, and/or evaluating bids. This role can be taken up by specialised innovation brokers, be it in the form of independent organizations/ consultants (as in the case of Oslo Municipality) or agencies that sit within a local, regional or national government institution and are specialized in different approaches to public procurement of innovation (e.g., local level: experts in the City of Amsterdam for the Startup in Residence Programme; regional level: a publicly funded organization named Zenit dedicated to support public procurement of innovation in the state of North-Rhine Westphalia in Germany while increasingly offering nation-wide services; national level: PIANOo as a specialised agency under the Ministry of Economic Affairs in the Netherlands).

## BEST PRACTICE EXAMPLES OF STRATEGIC PUBLIC PROCUREMENT

- Sector-specific planning and policy documents for **guiding public procurement** objectives for low-carbon cement in Ireland
- Multi-stakeholder initiatives for **defining and driving implementation** of sector specific sustainability targets in the Netherlands (Green Deals)
- Public sector engagement and **support for start-ups that address public sector needs** (such as low-carbon development) in the City of Amsterdam
- A new collaborative business model of a water utility company in East England, the Anglian Water @One Alliance, with ambitious low-carbon objectives and low-carbon product standardization strategies for construction materials
- Utilization of **pre-procurement market engagement** and a tender award methodology that facilitate supplier consortia building in the City of Eindhoven for accelerating low-carbon objectives and implementation-capacities along construction sector supply chains
- Definition and use of **technical specifications for determining the procurement** of low-carbon construction materials for infrastructure projects in the Netherlands, for public buildings in the Irish health care sector, and for the London Olympic Games;
- Definition and use of **functional specifications for facilitating the procurement** of innovative low-carbon concrete for a bicycle lane in Noord Brabant (Netherlands), and for the procurement of low-carbon materials for a public school building in Oslo Municipality (Norway);
- Utilization of **sustainability certification schemes** for the procurement of buildings with strong sustainability performance (including low-carbon construction materials) during the London Olympic Games (BREEAM and CEEQUAL) and in Oslo Municipality (FutureBuilt Standard, Norway);
- A **tender award mechanism** called DuboCalc, developed and applied by the Ministry for Infrastructure and the Environment in the Netherlands, for incentivizing bidders to identify and use low-carbon construction materials;
- The use of **innovation brokers** to support procuring authorities in their innovation procurement ambitions while establishing better interaction between the public and private sector to accelerate the dissemination of low-carbon innovation.

# HOW TO ACHIEVE IT ?

**To use the public procurement process to its full potential for boosting innovation and introducing low-carbon performance throughout the public procurement cycle, a number of actions can be implemented at both the European and national/regional level.**

# RECOMMENDATIONS FOR THE EUROPEAN COMMISSION

The implementation of the new industry strategy for Europe, launched in September 2017, will be a key process for the European Commission to support member states and cities in their procurement of infrastructure to ensure the sector's future competiveness. Relevant European Commission Directorate-Generals, such as DG GROW, DG Environment and DG Connect, could foster the implementation of the following recommendations as means to encourage, support and reduce the risks of procuring authorities in EU member states when procuring low-carbon infrastructure solutions:

### I. Promote best practices

Engaging and negotiating with market parties is key when determining low-carbon priorities for infrastructure projects and for encouraging potential contractors to identify and integrate respective solutions in their offers. Any engagement is always subject to the principles of transparency and fair competition. This is essential for strategic, sustainable public procurement. To facilitate market engagement and negotiation effectively, public procurers need EU level support in becoming negotiators and decision makers to secure value-for-money of low-carbon infrastructure solutions. In short: the need for support for capacity building and professionalization of the procurement profession. We recommend promoting best practices and lessons learnt from awarded tenders and executed projects (originating in member states) that focus on low-carbon infrastructure procurement and low-carbon innovation. This can be done at various forums available for capacity building: international forums, conferences, workshops, online platforms, news alerts as well as case studies and reports.

### II. Provide dedicated funding schemes

The European Commission can play an important role as convener of these forums and encourage knowledge-sharing.

The EU Horizon 2020 programme is an instrumental funding scheme to promote the potential for public procurement on enhancing innovation. Moreover, we recommend the provision of EU funding to national and local procuring authorities for innovation procurement as it is an effective approach for risk-sharing between different governance levels and can encourage procuring authorities to engage with new approaches on innovation procurement, including low-carbon innovation. These recommendations are in line with the 2017 EU Procurement Package that supports the professionalization (business skills, technical knowledge and procedural understanding) of public buyers in member states and advancing public procurement of innovation through facilitating exchange of good practices and innovative approaches.

### III. Support the development and dissemination of tools that operationalize value-for-money and low-carbon performance across the lifecycle of assets

The perception that demand for low-carbon (and other environmental) requirements entails comparatively higher expenses for infrastructure projects is caused by a continued focus on upfront cost of the project (design and build), little transparency about negative and positive externalities resulting in aggravated risk management, as well as limited knowledge about the applicability of lifecycle costing instruments for infrastructure projects. To operationalize the public sector responsibility of ensuring value-for-money across an asset´s lifecycle, we strongly recommend the development of suitable lifecycle costing instruments for infrastructure projects, modelling tools to quantify (long-term) external costs and benefits of low-carbon solutions and methodologies to make environmental product declarations comparable. We recommend the building of regional and national LCA databases, and data sharing at the EU level, supported by the European Commission as this will have the most wide-spread impact across EU member states and allows knowledge sharing across jurisdictions

### IV. Facilitate priority setting and decision-making on low-carbon solutions

Overcoming the institutionalized tradition to interpret value-for-money as lowest price necessitates concerted efforts. Public procurers need relevant and timely assurance for implementing MEAT (such as including low-carbon performance into tender award criteria), so that public budget holders and auditors do not question (the basis of) their award decisions. Auditors also need to understand the beneficial implications of these procurement priorities and the value of an increased degree of risk-taking in procurement. Auditors´ primary task must be to check procedural compliance rather than investigating whether tenders were awarded to the lowest bid price. We recommend that the European Commission engages in and promotes the training of auditors in member states, in parallel to public procurement officials.

### V. Provide technical assistance for low-carbon tenders

Low-carbon priorities can be operationalised in public tenders through defining performance-based requirements (e.g., $CO_2$ lifecycle footprint; degree of material reuse etc.), technical specifications that ask for low-carbon materials and through employing assessment and award methodologies that are based on full life-cycle assessments, and take into account carbon performance. We recommend knowledge sharing and assistance to national and local procuring authorities in preparing, writing and evaluating public tenders for low-carbon infrastructure projects. Offering such professionalized services is meant to be of temporary nature until sufficient capacities are established internally and/or until collaboration/joint procurement among local authorities is mainstreamed or innovation brokers are established as a measure to overcome time and capacity constraints of procuring authorities.

### VI. Promote the proliferation of innovation brokers

The Executive Agency for Small and Medium-sized Enterprises (EASME) of the European Commission launched a call for proposals to promote the concept of using and establishing an innovation procurement broker. This is a welcome development. An innovation broker can also support and facilitate the procurement of low-carbon innovation for infrastructure projects. We recommend the EC to launch more similar calls and likewise help to determine, mainstream and institutionalize innovation brokers in EU member states, especially in regions where (small) procuring authorities have limited internal capacities. Innovation brokers can be established in different organizational structures: dedicated department or employees within municipalities (e.g., dedicated staff for City of Amsterdam´s Startup in Residence Programme), in national or regional level support agencies (PIANOo in the Netherlands, Zenit in the state North-Rhine Westphalia in Germany), research institutes with specific expertise or as private consultancies. EU bodies and appointed research projects could support identifying the national level status-quo of available innovation brokers in each member states as well as proposing context-specific solutions for mainstreaming such innovation support infrastructure.

### VII. Facilitate policy coherence

A low-carbon economy is an important ambition of the EU. Likewise, the EU has placed strategic public procurement as one of the core pillars for delivering their industrial innovation and sustainable development goals. This suggests the need to stronger promote low-carbon objectives and low-carbon innovation through public procurement. In this regard, we recommend the EU to demonstrate a leadership role throughout their activities (directives, communications, funding schemes, call for proposals, conference etc.) for shifting public procurement from an administrative function to a more strategic function within public authorities in EU member states. This will help to strengthen the confidence of procurement officers in member states in prioritizing low-carbon performance of procured solutions.

# RECOMMENDATIONS FOR NATIONAL AND REGIONAL PROCURING AUTHORITIES IN EU MEMBER STATES

Procuring authorities are challenged to use procurement as a strategic instrument in better prioritizing low-carbon objectives, which presupposes empowerment, a change in their mind-set and adjustment of procurement practices. To this end we recommend the following:

## I. Make optimal use of capacity building and EU funding opportunities

Above encouraged support measures provided by the EU as well as nationally and regionally established service providers (e.g., innovation brokers) naturally have to be utilized by procuring authorities in order to make an impact. Therefore, we recommend to procuring authorities to better inform themselves about support opportunities and that higher hierarchy levels in authorities encourage (and provide budget for) the interest of procurement and/or legal staff to take part in capacity building workshops and in identifying, familiarizing with and utilizing value-adding resources.

## II. Centralize/bundle demand to create scale and incentives for low-carbon investment

We recommend procuring authorities to pursue exchange with other authorities prior to designing and launching a tender. Collaboration among public bodies and among municipalities allows to standardize procedures for similar infrastructure projects and scale demand for low-carbon solutions. This increases the volume and value of public tenders, provides more certainty/predictability and economies of scale for market actors. At the same time, it can reduce transaction costs for procuring authorities prior to and during tendering.

## III. Facilitate cooperative business models

When public tenders are large enough in volume and/or provide long-term contractual arrangements, this can also incentivize cooperation and consortia building throughout the value chain. This can in turn lead to cooperative business models (facilitated through legal entities and/or contractual arrangements concerning responsibilities and profit sharing) that unite the expertise of different value chain actors to share risks among them, making it more appealing to integrate innovative solutions and also invest in determining standardized solutions where appropriate. Research findings show that not all details can be covered by contractual clauses, but trust and a collaborative mind-sets are crucial elements for these business models (e.g. @ One Alliance as an example that integrates different value chain actors and disciplines, and therefore seeks to standardize and streamline new solutions that ensure efficiency while improving public services). To foster the emergence of such elements, we recommend that procuring authorities introduce and facilitate consortia building during pre-procurement dialogues and reward the integration of various value chain actors. Moreover, to allow sufficient lead time for value chain actors to advance low-carbon solutions, we recommend publishing respective infrastructure plans on national or even EU-wide information platforms significantly prior to a requests for proposals (RfP).

## IV. Encourage dialogue throughout the procurement cycle

To plan tenders efficiently and quickly, and to determine suitable low-carbon materials for complex and innovation-oriented infrastructure projects, transparent market engagement and dialogue are decisive. We recommend procuring authorities to engage with the market continuously for having access to market intelligence, to use third-party facilitated project-specific market consultations prior to tendering, and to make use of dialogue enabling procurement procedures, i.e. the competitive procedure with negotiation or the competitive dialogue. These third parties can take the role of an innovation broker.

## V. Encourage performance-based procurement

We also recommend the use of functional or performance-based specifications with a low-carbon focus where feasible. This enables procuring authorities to promote design thinking for low-carbon objectives (among others) while not having to have expertise about available solutions for complex infrastructure projects. At the same time, performance-based specifications will allow market actors that were not involved in early planning stages to apply their expertise in suggesting technical solutions and innovations. Finally, the performance focus facilitates the identification of best available technologies in the market. A pre-condition for all these efforts is the professionalization of the procurement profession, as recommended above.

## VI. Apply publicly available tools for carbon and environmental footprint calculations

It is important to mainstream the application of tools that calculate the carbon or environmental footprint of materials proposed for infrastructure designs and/or apply lifecycle assessments on a project level. We recommend procuring authorities to utilize such available tools by requiring bidders to use them, and if necessary, by providing information sources and supplier trainings. Through a wide-spread and continuous application, there will be an increasing number of performed product environmental (and carbon) footprints, which will gradually improve the underlying databases of such tools. This increases the credibility and encourages the use of such tools as they become more informative for all parties. For example, in the Netherlands, after introducing DuboCalc (calculation of the environmental cost indicator of proposed construction materials) almost ten years ago, the market is now confident to use it for designing ambitious low-carbon projects. Contractors of infrastructure projects are incentivized to start innovating and collaborating with their supply chains, and use the available databases to identify low-carbon material alternatives.

LCA databases must contain country-/region-specific information, and submitted data need to be verified by third parties (certified environmental product declarations). Databases need to be managed by independent organisations that are recognised as trustworthy by the private and public sector.

**Implementing these recommendations will enable an optimized use of the public procurement process for providing value-for-money to EU citizens and for securing the long-term competitiveness of the EU´s construction and infrastructure industries in a low-carbon future.**

**About the project**
This policy brief is based on a larger research project conducted by IISD and i24c of which the full report will be published in January 2018. The project is financed by the European Climate Foundation under the i24c initiative.

**About i24c**
The Industrial Innovation for Competitiveness (i24c) initiative is a European platform established by the European Climate Foundation and dedicated to developing and promoting an industrial strategy that secures European industry's competitive advantage through innovation. It aims to strengthen understanding and confidence in how, through a systemic focus on innovation, Europe's industries can successfully compete and drive prosperity in the dynamic transition to the new economy, shaped by global technological, social and ecological mega-trends. i24c develops evidence to inform the critical debate on these issues in Europe and works to co-create effective and socially fair solutions with a wide range of partners.
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