Chapter 5

Sustainable public procurement and manufacturing

Key contents of the chapter:

1. Two categories of policy rationales underpin sustainable public procurement and green manufacturing, namely (a) to address imperfect market conditions (e.g. compensating positive externalities generated by certain sectors, facilitating access to finance, reducing cost through increases of production scale, addressing coordination problems, and realising latent comparative advantages) and (b) to generate efficiency gains (this applies both to producers and to governments, that will be able to reduce the cost of performing a variety of public sector functions that are affected by cheaper but more polluting products and services procured in other areas).

2. The spectrum of policies that can be adopted may be organised under two main headings. Firstly, sustainable public procurement processes, which have developed significantly in the last decades, can be implemented through a four-step approach involving the setting up of a team piloting the initiative, assessing the initial conditions, adopting policies and plans, and monitoring and managing the implementation of specific contracts awarded. The measures to give effect to such policies and plans depend upon the type of procurement process and the stage at which sustainability considerations are integrated. Secondly, green manufacturing processes can be driven by different rationales according to their target, with standard abidance and certification being a key driver when necessary to participate in sustainable public procurement processes.

3. Two representative illustrations are provided by the implementation of sustainable public procurement programmes in the European Union and by China’s efforts to make its economy more circular and resource-efficient.

4. A summary table placing the tools reviewed in this chapter within the overall methodology presented in Chapter 1 is provided at the end of the chapter.
The use of sustainable public procurement and the greening of manufacturing processes are in many ways an extension or a more specific application of the policy tools discussed in Chapters 3 and 4, namely support schemes and standards. Indeed, sustainable public procurement aims to use the purchasing power of governments to promote products and services that meet certain sustainability standards. The greening of manufacturing processes is a way of becoming more sustainable (at the level of the product, the process, or the business model) and thereby to benefit from the opportunities presented by sustainable public procurement.

**Green public procurement** (GPP) can be characterised as ‘a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured’ (European Commission (2011)). A wider but related concept is that of **sustainable public procurement** (SPP), which relies on both environmental and social criteria in the selection of goods, services and works procured. The key component in both concepts is the use of the government’s purchasing power to promote environmental protection and social inclusion. When the focus is on the purchasing power of the private sector (in order to influence producers of inputs in the supply chain), the logic is similar. In both cases, however, purchases are based on a variety of criteria aimed at reorienting the products, processes, or business model of providers. **Green manufacturing** is closely connected to the mobilisation of purchasing power. It differs from conventional manufacturing in that ‘it aims to reduce the amount of natural resources needed to produce finished goods through more energy- and materials-efficient manufacturing processes that also reduce the negative externalities associated with waste and pollution. This includes more efficient transport and logistics, which can also account for a significant percentage of the total environmental impact of manufactured products’ (UN Environment (2011)). Making manufacturing greener is not only a way of reducing overall costs
(efficiency gains) but it may also place a producer in a better position to compete for either public procurement contracts and private procurement ones.

The **rationale for applying these tools is therefore two-fold**. On the one hand, as already noted in Chapters 3 and 4, sustainable public procurement and green manufacturing can be used to ensure some level of **compensation of green producers for the social and environmental benefits** they generate, to realise **untapped potential** (enabled by increased demand) as well as to improve access to **sufficient finance** (which is facilitated by higher demand for the product and hence the lower credit risk from a lender/investor perspective), reduce **production costs** (as a result of economies of scale) and address **coordination problems** (the public sector serves as a large company or industry procuring the products, services and works from greener producers). On the other hand, sustainable public procurement and green manufacturing enable **efficiency gains for the producers**. Manufacturers become more efficient by reducing the cost of inputs and hence save costs. As for the public sector, supporting greener production and manufacturing is also a way of reducing the overall cost of performing other governmental functions (e.g. lower levels of pollution can lead to lower costs in sectors such as health care, waste treatment, water treatment, etc.). Both sustainable public procurement and green manufacturing are, moreover, of special relevance from a trade perspective because they are specifically regulated in a variety of contexts discussed later in this chapter.

**Figure 1: Rationales and policy tools**

<table>
<thead>
<tr>
<th>Policy rationales</th>
<th>Type of market failure/efficiency gain</th>
<th>Policy tools</th>
</tr>
</thead>
</table>
| Market failures   | - Compensating positive social and environmental effects  
                   - Tackling financial, scale and coordination challenges | - Sustainable public procurement  
                   - Trade facilitation for green manufactured products |
| Efficiency gains   | - More efficient production processes at the firm or supply chain level  
                   - More efficient production processes at the level of society (reduced social and environmental burden that would otherwise be borne by tax-payers) | - Sustainable public procurement  
                   - Green manufacturing standards |
Figure 1 summarises the rationales and the policy tools that can be used to tackle them. The rationales are similar to those reviewed in other chapters because they are the general backdrop of green industrial policy. But the measures selected focus on those steps that can be taken to promote both sustainable public procurement and green manufacturing and, specifically, those steps that are particularly relevant from a trade policy perspective.

In the next sections, the chapter discusses the varieties of programmes that can be adopted to promote sustainable public procurement as well as green manufacturing (section 2). Section 3 then provides two examples, namely the implementation of sustainable public procurement in the European Union and circular economy policies in China. Section 4 summarises the chapter and places this tool within the methodology presented in Chapter 1.
2. The tool-box

2.1. Spectrum of measures used in practice

The spectrum of measures covered in this chapter can be organised under two main headings, namely measures relating to sustainable public procurement and measures relating to green manufacturing. As already noted, both are related because the former can be used to induce manufacturers to produce green products, adopt greener production processes and methods or change their business model. They do not overlap entirely however and some differences also exist as regards their legal treatment. For this reason, it is useful to discuss them separately.

2.2. Sustainable public procurement

Public procurement can provide a powerful lever for industrial policy because it represents between 12 per cent (in countries that are part of the Organisation for Economic Co-operation and Development, OECD) and up to 30 per cent (in many developing countries) of Gross Domestic Product (GDP). It is, moreover, one of the strategic areas envisioned in the 2030 Agenda for Sustainable Development, adopted by the UN General Assembly in 2015. One of the Sustainable Development Goals (SDG) identified in the Agenda, focusing on sustainable consumption and production patterns, specifically targets the promotion of ‘public procurement practices that are sustainable, in accordance with national policies and priorities’ (SDG 12.7). In this section, we discuss four aspects of sustainable public procurement, namely:

- Global trends;
- Approaches to introducing sustainable public procurement at the national and local levels;
- Some questions of policy design (definition of the requirements of contracts, selecting and excluding tenderers, awarding contracts, and contract performance clauses); and
- The international trade law dimensions of sustainable public procurement.
Global trends

A recent global review of sustainable public procurement practice prepared by UN Environment and encompassing 41 States (UN Environment (2017)) suggests a number of broad trends that must be taken into account by States wishing to understand how this major market for their exports is evolving. Overall, the report suggests that sustainable public procurement provisions are increasingly frequent in all policy areas but that, in many cases, they result from the initiative of individual departments, agencies and ministries rather than from a general economy-wide policy. The scope of the goals pursued through this instrument is widening to include not only environmental issues (e.g. energy conservation, resource efficiency, and climate change mitigation) but also social issues (diversity and equality, employment and business development, and human well-being and social justice). Ecolabels (a variety of the standards discussed in Chapter 4) are increasingly used as mandatory requirements in product or service specifications (i.e. to be able to provide such products or services to the government, a producer/provider needs to have its products/services suitably certified as meeting the requirements of certain labels). Last but not least, sustainable public procurement is increasingly being used as a strategic instrument to achieve certain sustainable development and green industrial policy goals.
Introducing sustainable public procurement: The UN-Environment’s four-step approach

As part of the UN 10-Year Framework on Sustainable Consumption and Production, a set of principles and guidelines on the implementation of sustainable public procurement programmes was developed (see for a detailed implementation manual UN Environment (2012)). These guidelines proposed a structured but flexible approach that has been tested in a number of countries, including Chile, Colombia, Costa Rica, Lebanon, Mauritius, Tunisia and Uruguay. The approach is based on four steps, summarised in Figure 2:

**Figure 2: UN Environment’s approach to sustainable public procurement**

**Step 1** focuses on who will lead the project and how. The necessary governance framework must be set up, including the buy-in from leaders with sufficient authority and power, and training must be provided to the pilot team.

Once the group leading the project is established and trained, **Step 2** focuses on assessing the situation on the ground as well as the goals that are pursued by means of sustainable public procurement. This step entails a number of reviews or assessments of the initial conditions, including a ‘status assessment’ (of existing public procurement policies and practice), a ‘legal review’ (of existing laws, both at the domestic and the international level, to avoid taking measures that would be inconsistent with international commitments), a ‘prioritisation exercise’ (aimed to clarify the priorities in using sustainable public procurement), and a ‘market readiness analysis’ (this is particularly important from the perspective of domestic green industrial policy because if the market is not ready most of the benefits will be captured by foreign producers/providers and infant green industries may face an additional competitive disadvantage).
The four assessments conducted in Step 2 provide the basis for the development of the policy strategy, in Step 3, on which sustainable public procurement will rest.

The action plan is critical as it will provide the road map of the implementation of the programme in Step 4. At this stage, it is particularly important to monitor the development of the programme to spot potential difficulties and adjust the framework as early as possible.

Also, appropriate training of staff managing the processes across government divisions is key at all steps, from the beginning to the end of the process. Box 1 illustrates the four-Step approach by reference to the case of Hong Kong’s procurement of LED traffic light retrofit.

**Box 1: Hong Kong’s procurement of LED traffic light retrofit**

The Transport Department of Hong Kong Special Administrative Region (HKSAR) is the authority responsible for regulating road traffic, public transport and major transport infrastructure. In an effort to promote more sustainable transport solutions, it implemented a project replacing all conventional traffic lights with LED traffic light modules. Since 2000, the Transport Department had monitored the development of LED traffic signals to understand the technology and prices. Between 2007 and 2008 it then engaged in a pilot scheme to replace about 100 conventional traffic lights by LED modules. After verifying that the newly installed LED lights operated satisfactorily, the Department issued three public contracts through which all conventional traffic lights were to be replaced by 85,000 LED traffic light modules. The tender was open to those suppliers that completed, before, a prequalification scheme, as part of which suppliers needed to submit their technical proposal and sample material for testing. While suppliers needed to invest considerable resources to adjust their products to the prescribed specifications, the sizeable market created by the public procurement scheme made the project financially attractive. The project resulted in an annual cost saving of US$ 48,500 and a reduction of 55000 tonnes of CO₂ emissions per year.

**Source:** UN Environment (2013a)
Design features of sustainable public procurement measures

When considering the specific measures to be undertaken under Step 3 and 4, it is useful to take into account the type of procurement procedure and the different stages at which sustainability considerations can be integrated in a procurement process.

Regarding the type of procedure, the procurement process can be organised as follows:

- As an open tender (where any producer/provider could present a bid if it meets the eligibility requirements),
- a restricted tender (where only a limited number of pre-selected producers/providers are invited to tender),
- a competitive procedure with negotiation and dialogue (where the tendering authority engages more directly with potential tenderers, suggesting and discussing sustainability criteria but also learning about available technologies and possible combinations),
- or the establishment of an innovation partnership (where the tendering authority enters into a partnership with some contractors to develop a technology, product or service that is not currently available on the market).

In all these cases, sustainability criteria can be introduced at different stages of the tendering process. Most frequently, this is done in the tender documents through technical specifications relating to the products and services to be procured, increasingly by reference to widely recognised standards. Tendering authorities have great latitude in defining the subject-matter of the procurement process, i.e. the type of product, service or work that is to be procured. In describing this subject-matter they can therefore integrate sustainability considerations, including through the use of a functional or a performance-based definition. Such description is made more specific and above-all measurable through technical specifications that must be met by the product, service or work to be procured. This is done through standards, which can in turn be of different sorts. Performance-based standards (which instead of requiring a specific design focus on the performance of alternative designs) tend to allow for more – and thereby promote – innovation. Specifications can relate to a product’s content (the materials it contains) and/or the processes through which it has been produced (which can vary significantly even for identical end products).

In addition, sustainability considerations can target more generally the performance of tenderers (the producers and service providers of products or services) as regards certain criteria (environmental and technical capacity,
environmental and supply chain management, or proven compliance with certain environmental and other laws). In practice, such performance can make tenderers eligible or ineligible (in an open tender process) irrespective of whether the specific products or services offered meet themselves the criteria. These performance requirements of tenderers can also be implemented through a pre-selection process in a restricted tender procedure: In this case, only products of those tenderers that are deemed eligible in the pre-selection, will be considered in the actual tender process.

Sustainability considerations can also be integrated into the criteria for awarding a contract so as to encourage tenderers to go beyond the minimal technical specifications (hence providing an advantage to the most sustainable bidders), or by ensuring that life-cycle costs or implications are taken into account when comparing bidders (as the environmental footprint of a good or service may change significantly when the entire life-cycle of the product is taken into account) or, still, by excluding excessively low bids (that tend to be strategically used by bidders to enter into a market and are often poorly performed).

Sustainability considerations must be taken into account beyond the award of a contract and during its implementation, with suitable contractual clauses requiring monitoring throughout the process (including of sub-contractors) and adequate remedies in case of failure to meet sustainability standards.

The green procurement practice in the European Union can serve as a detailed illustration of all these variants (see European Commission (2016)). Some aspects of this practice are discussed below in section 3.1 of this chapter.

Legal aspects

Given the practical importance of public procurement and the possibility that it may lead to uncompetitive practices, it is regulated in some detail in international trade law. Such regulation is of particular relevance for sustainable public procurement because the criteria used to favour more sustainable products and services may introduce differential treatment and distort market access by different providers. The regulation of this question in international trade law thus seeks to balance two competing considerations. On the one, it seeks to ensure non-discriminatory access to public procurement by different (foreign and national) providers whereas, on the other hand, it allows for some measure of differentiation based on a variety of preferential criteria to pursue sustainable development. The three most important layers of regulation are Article III:8(a) of the General Agreement on Tariffs and Trade (GATT), the Government Procurement
**Agreement (GPA)**, which is a plurilateral treaty that binds some but not all WTO members, and a number of free trade agreements between specific States, which contain provisions on public procurement.

**Article III:8(a)** is a derogation clause excluding certain forms of public procurement from the obligation to treat foreign products no less favourably than domestic ones. The provision concerns ‘laws, regulations or requirements’ governing the procurement by ‘governmental agencies’ of ‘products’ that are purchased ‘for governmental purposes and not with a view to commercial resale or with a view to use in the production of goods for commercial sale’. If these requirements are met, then a government can treat foreign products less favourably than domestic ones in its purchases of a range of materials.

Given the importance of this loophole in the national treatment provision, a number of WTO members decided to conclude a specific plurilateral agreement on government procurement. The 1994 Government Procurement Agreement sought to impose some level of discipline in providing market access to foreigners in public procurement processes (and thus limiting the space for national preference). To do so, each party to the agreement submits a ‘Coverage Schedule’ defining the procuring entities, the goods/services/construction works, and the threshold values to which the market access disciplines of the GPA will apply. The Schedule also defines the exceptions to the coverage of the GPA. In 2014, the GPA was revised to apply to more entities and to smaller contract values, thus extending its coverage. At the same time, the revision of the GPA placed the system in a different light: it is no longer limited to a focus on market access but also seeks to provide some flexibility for the pursuit of social and environmental values. By way of illustration, Article X paragraphs (6) and (9) specifically envision the inclusion in the contract specifications and award criteria of matters such as the conservation of natural resources, the protection of the environment or environmental characteristics. More generally, public procurement can be used to achieve social and environmental objectives if the measures are not discriminatory or, if they are so, if the measures can either benefit from a derogation included in a party’s Coverage Schedule or be justified under one of the exceptions in Article III(2) of the revised GPA (Corvaglia (2016)). Article III(2) is very similar to the general exceptions clause in Article XX of
the GATT. For those countries that are parties to the GPA, this agreement takes precedence (is a *lex specialis*) over the derogation in Article III:8(a) of the GATT.

In addition to the above layers, some countries have signed *free trade agreements*, whether bilateral or regional, that are relevant to matters of public procurement, including provisions on eco-labelling, production cycles, as well as a variety of references to renewable energy and energy efficiency. A survey of such agreements is beyond the scope of this chapter (see Chapter 6 for a general discussion of treaty provisions relating to green industrial policy), but a relevant illustration is provided by Articles 19.9(6) and 19.9(9) of the Comprehensive Economic Trade Agreement (*CETA*) between Canada and the EU, which are very similar to Article X paragraphs (6) and (9) of the revised GPA.

### 2.3. Green manufacturing

#### Overview

As already noted, from an industrial policy perspective, green manufacturing can be seen as an extension of policy tools already studied in this manual, particularly standards and their integration in sustainable public procurement. There are also other drivers of green manufacturing, such as the search for resource and energy efficiency, branding, and private consumer demand. From a trade perspective, both the policy and the private drivers are important, as producers and service providers harness green manufacturing to be more competitive in foreign markets. This section discusses the main varieties of green manufacturing and how they fit within two types of policies that can be used to advance it (standards and sustainable public procurement). The legal questions these policies raise under international trade law have already been discussed in the preceding section (as regards sustainable public procurement) as well as in Chapter 4 (as regards standards). The discussion is organised around the targets of green manufacturing.

Generally speaking, green manufacturing aims to *redesign products, production systems and business models* (e.g. by extending the responsibility of the purchaser with respect to the practice of sub-contractors or with respect to the management of waste arising from its products). The gains of green manufacturing are derived from:

- The cost reduction made possible by more resource- and energy-efficient processes;
- The increasing demand for green manufactured and suitably certified products from both major private and public sector purchasers; and
The possibility of producing new products or offering new services that satisfy the increasing demand for environmental goods, services and works. These approaches (efficiency gains, products/processes certified as standard compliant, new green products and services) to green manufacturing are inter-related but they can also be seen as levels of ambition in the transition to greener manufacturing.

Green manufacturing and efficiency gains

Green manufacturing can result in significant efficiency gains. The search for such gains is not necessarily related to public policies but rather to cost reduction, branding and marketing strategies adopted by companies. Figure 3 identifies, for different stages of the production process, the types of measures that can be adopted in pursuance of green manufacturing:

<table>
<thead>
<tr>
<th>Figure 3: Green manufacturing at different stages of the production cycle</th>
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<tbody>
<tr>
<td><strong>Extraction of materials (resources)</strong></td>
</tr>
<tr>
<td>In this step, resources needed for product manufacturing are collected. Some equipment is used for environmental impact reduction in this stage.</td>
</tr>
<tr>
<td><strong>Material and component production (materials/parts)</strong></td>
</tr>
<tr>
<td>This is a stage where interim products including materials and components are manufactured. Such interim products and their designs are intended for environmental impact reduction.</td>
</tr>
<tr>
<td><strong>Design and material selection (design)</strong></td>
</tr>
<tr>
<td>In this step, designs and materials are carefully selected for product manufacturing, including environmentally compatible designs.</td>
</tr>
<tr>
<td><strong>Product manufacturing (production)</strong></td>
</tr>
<tr>
<td>Products are manufactured in this step using materials and components. This step includes products that help reduce environmental impact during the manufacturing process.</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
</tr>
<tr>
<td>In this step, materials, parts, and products are carefully transported to result in a low environmental burden. This step includes products for which modes of transportation have been changed and those with unique packaging.</td>
</tr>
<tr>
<td><strong>Product use, maintenance, and repair (use/repair)</strong></td>
</tr>
<tr>
<td>In this step, products are used by consumers and maintenance and repairs are carried out. This step includes consideration of energy saving and environmental cleanup as well as prolonging product life by repairs and product life improvement.</td>
</tr>
<tr>
<td><strong>End-of-life</strong></td>
</tr>
<tr>
<td>In this step, products are disposed of and recycled. Included in this step are products that contribute to the reduction of final disposal volumes and can be disassembled, are easily reusable, easily recyclable, and compatible with well-established recycling systems.</td>
</tr>
</tbody>
</table>

Source: UN Environment (2013b)
Green manufacturing and standards

Another form of greening manufacturing processes is by complying with certain recognised standards and seeking certification for such compliance. At this level, the connection between green manufacturing, standards and sustainable public procurement is particularly close, as suggested by the increasing reliance on a variety of standards in sustainable public procurement processes.

Standards are widely used in four of the main sectors where sustainable public procurement constitutes an important share of the market, namely:

- buildings (e.g. the use of LEED certification, i.e. ‘Leadership in Energy and Environmental Design’),
- food and catering services (e.g. standards certifying that at least some percentage of the food sourced is organically produced),
- vehicles (e.g. requiring that vehicles meet the latest EURO norms on emissions particulate matter and nitrous oxide), and
- energy-using products (e.g. IT equipment purchased by central government authorities in the EU must belong to the highest energy-efficient class available for the product category, according to the Energy Efficiency Directive).

Green manufacturing and sustainable public procurement

The third approach is to specifically cater to the demand for new green products and services. As discussed in the section 2.2. of this chapter, this can be driven through certain types of procurement processes such as competitive procedures with negotiation and dialogue or innovation partnerships. In this case, sustainable public procurement becomes not only a tool to encourage green manufacturing but also to encourage green innovation and realise latent comparative advantages.

In the next section, two examples combining questions of sustainable public procurement and green manufacturing are discussed focusing, respectively, on the practice in the European Union (in the implementation of sustainable public procurement) and in the efforts of China to make its economy more circular and less wasteful.
3. Case-studies

3.1. Implementing Green Public Procurement in the EU

Green Public Procurement (GPP) is regarded as an important tool to achieve environmental policy goals in the EU. The EU has put in place various rules, regulations and incentives to enable and support countries to implement GPP. These include, for example, the 2014 Procurement Directives that enable public authorities in EU countries to take environmental considerations into account in their procurement processes. On a sectoral level, EU legislation also creates mandatory obligations for the procurement of greener goods and services. An example is provided by the requirement for IT products purchased by public authorities to meet the latest EU minimum energy efficiency requirements. To assist public authorities in the identification of green products, the EU has developed environmental procurement criteria for a variety of product and service groups, which can be inserted directly into tender documents. Many EU member States have set their own national criteria, which are usually based on or guided by the EU criteria while taking into account a country’s specific circumstances.

Most EU countries have established National Action Plans (NAPs) for green or sustainable procurement. These provide countries with a strategic direction for the implementation of GPP. An example is provided by the Flemish government, which has set itself an ambitious 100 per cent target of sustainable public purchasing. Steps for reaching this target are defined in a series of action plans. Each plan provides guidance, spells out sustainability criteria and establishes monitoring mechanisms to ensure that all government departments can meet this goal. Many EU-member states have advanced e-procurement systems in place, which may provide a valuable tool to support GPP implementation. E-procurement systems allow authorities to track the use of GPP criteria and to verify that suppliers have provided the information required to demonstrate their compliance.

EU member countries often make tools and manuals on GPP available on their websites and some also have national GPP helpdesks. To support capacity building, many EU countries and regions offer training programmes on GPP. One example is Ecosportelli, in Italy, which forms part of the Sardinia Regional Network for GPP. Ecosportelli supports provincial governments, municipalities and local businesses on sustainable public procurement. Workshops, so-called ‘Technical Laboratories’, are organised throughout the region to help participant entities to design and implement concrete actions towards green purchasing. Also, networking between local or regional GPP networks has proven useful to

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11 This section is based on European Commission, Buying Green. A handbook on green public procurement (3rd edn 2016).
exchange ideas and share experiences. The European Procura+ Campaign, for example, allows for the sharing of GPP experiences across borders and the implementation of lessons learnt at the local level.

### 3.2. Circular economy policies in China

In the past decades, China has risen to become the world’s manufacturing powerhouse, producing 45 per cent of global aluminium, 50 per cent of steel and 60 per cent of the world’s cement in 2011. It has also become the main consumer of raw materials and producer of waste: It consumed 2.2 billion tons of raw materials (as of 2011), more than the 34 countries of the OECD combined, and generated 3.2 billion tonnes of industrial waste (as of 2014).

To respond to these challenges and the domestic and geopolitical pressures accompanying them, China has put in place policies, targets, financial measures and legislation with the final goal to make China a ‘circular economy’. By closing industrial loops, a circular economy transforms outputs from one manufacturer into inputs for another, thereby significantly reducing resource consumption and waste. While Western countries have struggled for decades to significantly advance their circular economies due to the challenge to make companies collaborate along the supply chain, China has used the concentration of its manufacturing activities in industrial parks and export processing zones and its close involvement with the economy to its advantage. One example is the Suzhou New District (SND), one of three national eco-park demonstration sites in 2008, that consists of about 16,000 enterprises and 4,000 manufacturing firms. In an effort to promote the circular economy, steps were taken to identify and target gaps along integrated supply chains and to address these. Between 2005 and 2010, the district reduced its energy intensity by 20 per cent and reached a utilisation rate of industrial solid wastes of 96%, in comparison to the national average of 69 per cent.

Targets for the circular economy were already formulated for China’s 11th Five-Year Plan (2006-2010). In its 12th Five-Year Plan (2011-2015), China further stepped up targets and made the circular economy a national development strategy. In 2013, the State council released a national strategy for realizing the circular economy, becoming the first of its kind in the world. Action points under this strategy included, among others, the establishment of 100 demonstration cities, such as Suzhou and Guangzhou, and 1,000 demonstration enterprises or industrial parks nationwide. The National Bureau of Statistics has analysed progress on the achievement of key targets since 2005. By 2013, resource intensity and waste intensity had improved by 34.7 per cent and 46.5 per cent, respectively. The treatment rate of pollution had also increased by 74.6 per cent, whereas improvements in recycling and the reuse of waste were somewhat slower, with an increase of 8.2 per cent.

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## Summary table

<table>
<thead>
<tr>
<th>High-level vision setting and stakeholder consultation</th>
<th>UNIDO Practitioner’s Guide for Strategic Green Industrial Policy – Phase 1</th>
</tr>
</thead>
</table>
| **Stock-taking**                                      | Gathering information of socio-economic, environmental and existing policies to define a baseline, particularly as regards the following enabling conditions for trade-related green industrial policies:  
  - Appropriate resource endowment and political/social conditions  
  - Public investment and access to credit  
  - Adequate infrastructure  
  - Domestic legal and regulatory framework  
  - Integration into international agreements |
| **Prioritising intervention areas and goal-setting**   | Identifying policy rationales to be acted upon and sustainability goals to be reached.  
Policy rationales may include:  
  - Compensating positive externalities generated by certain sectors/industries  
  - Facilitating access to finance  
  - Reducing cost through increases of production scale  
  - Addressing coordination problems  
  - Unleashing latent comparative advantages  
  - Generating efficiency gains both for producers and for governments (in a cross-sectoral perspective) |
| **Selecting the tools**                               | Matching selected policy rationales with policy options. Policy options may include:  
Within the broad category of sustainable public procurement:  
  - Tendering processes  
  - Contract specifications  
  - Pre-selection of tenderers  
  - Contract award criteria  
  - Monitoring and implementation processes  
Within the category of green manufacturing policies:  
  - Standards |
| Design and assessment | Specific design of policy option. Selection within each variety of the tool of specific design features:  
For sustainable public procurement:  
  • Type of tendering process (open tender, restricted tender, competitive procedure with negotiation and dialogue, innovation partnerships)  
  • Contract specifications (different definitions of the object procured and different types of criteria)  
  • Pre-selection techniques (depending on experience and/or environmental footprint of the tenderers)  
  • Contract award criteria (quantitative scoring criteria, qualitative and more discretionary criteria)  
  • Monitoring and implementation processes (requirements of regular monitoring, certification, penalties in case of default)  
For green manufacturing:  
  • Standards (of different nature, with different sources, targets, contents, verification methods, and consequences)  
  • Assessment of consistency and impact:  
  • Legal assessment  
  • Integrated socio-economic and environmental impact assessment |
| Implementation | UNIDO Practitioner’s Guide for Strategic Green Industrial Policy – Phase 6 |
Resources

NB: all links last visited on 15 September 2017


- IDRC/INGP/IISD, Implementing Sustainable Public Procurement in Latin America and the Caribbean (2015).


- UN Environment, Green Economy and Trade. Trends, Challenges and Opportunities (2013b).

- UN Environment/CEGESTI, Promoting the participation of Small and Medium Size Enterprises (SMEs) in Green Public Procurement (2016).


- World Bank, New Procurement Framework and Regulations for Projects After July 1, 2016. (resources).